

Journal of Projective Techniques & Personality Assessment

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Editorial

Paul George Daston: 1921-1967

The sudden death, on the morning of November 19th, of Paul Daston stunned his family, and his friends and colleagues throughout the country. In addition to his numerous professional and intellectual accomplishments, Paul was a sincere, warm, genuine and compassionate human being whose friendship was treasured by many.

Following the completion of his secondary education in his native Boston, Paul joined the United States Air Force at the beginning of World War II and served until he was shot down over Italy, on his 43rd mission, in 1945. Subsequent to his recovery he returned to college, and received the AB at Northeastern University, the MA and PhD, in 1952, at Michigan State University.

After serving a stint as staff psychologist at the Battle Creek V.A. Hospital, he moved to Brockton (Mass.) V. A. Hospital where he occupied, with distinction, the positions of clinical and research psychologist, from 1954 to 1958. During the next three years Paul was Chief Psychologist at the Durham (North Carolina) V. A. Hospital and a faculty member of the departments of psychology and psychiatry at Duke University. Subsequent to that period he joined the faculty of the University of Maryland where he rose to the rank of full professor. At Maryland Paul was able to combine his clinical, teaching and research interests, all of which were strongly developed ever since he left graduate school.

In addition to his various publications on a variety of clinical topics such as assessment, rehabilitation, and treatment,

he was well along on a textbook in normal psychology. His premature death left this task unfinished. For several years, until his death, he also served as consulting editor of the *Journal of Projective Techniques and Personality Assessment*.

Paul Daston was a man of boundless energy. In addition to his academic teaching, research and scholarly activities, he was consultant to several governmental and private agencies and participated actively in his professional organizations. He served on committees of the division of clinical psychology APA and undertook the arduous task of assistant convention manager of the APA convention in Washington, D. C. This great involvement on the part of Paul was apparently at the expense of his health. He did not heed the warning his heart had given him several years earlier.

Above all, Paul Daston will be remembered, by his friends, colleagues and students, for his personal qualities—the ready humor, spontaneity, gentleness, warmth, and the devotion and steadfastness in his friendships. We will miss him among our friends feel the loss keenly, but his wife, Marie, and four children are left to face a great void which cannot be filled.

A "Paul Daston Fund," to be used at the discretion of the widow, was established by some of his friends and colleagues. Contributions may be sent to Paul Daston Fund, Twin Pines Savings & Loan, Greenbelt, Maryland.

A. I. Ral

The Use of Projective Methods in Research: 1947 - 1965¹

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Summary: A survey of ten journals was conducted to determine the use of 21 projective techniques in research during the past 18 years. The purpose of this study was to obtain an overview of trends and to extend the survey presented by Mills (1965), which was based only on the *Journal of Projective Techniques and Personality Assessment*. Data presented were yearly ranks and absolute frequencies for specific methods. The use of projective techniques peaked in 1955, dropped sharply in 1956 and 1957, and then remained at a rather stable level through 1965. The most frequently used techniques have changed little over the years surveyed, with the Rorschach, TAT, and Human Figure Drawings outranking all other methods; the next most frequently employed techniques being the Bender-Gestalt, Sentence-Completion, Word Association, Rosenzweig P-F, House-Tree-Person, Szondi, and Blacky.

The clinical employment of psychological tests, including projective techniques, has been surveyed by Sundberg (1961). The research use of projective techniques cited in the *Journal of Projective Techniques and Personality Assessment*, and its predecessors, has been catalogued by Mills (1965) for the years 1947 through 1964. A survey similar to Mills' (1965) but sampling a wider range of journals appeared to offer greater reliability and usefulness to researcher and clinician alike. Such a survey should supply the interested scholar with baseline data and also, an awareness of trends in the research over time.

This study surveys ten psychological journals for their inclusion of research with 21 projective techniques cited by Mills (1965). The techniques are typically employed in research in one of two ways, *viz.*, to examine the test instrument itself for reliability, validity, etc., or to serve as a tool in research which focuses on a substantive problem, such as a study of alcoholics. It can be seen that the use of these methods in research as a tool is

similar to the clinician's application of them in understanding an individual patient.

Since the present study was initiated in part to extend Mills' (1965) work, the *Journal of Projective Techniques and Personality Assessment* was not included in the survey.

The criteria for selection of the journals sampled were: (a) the journal must be well known and widely read; and (b) some coverage of the areas of general, educational, medical, clinical and counseling psychology must be obtained.

Method

An intensive survey was made of the ten journals listed in Table 1 for the years 1947 through 1965. Each article was examined to determine if any projective techniques had been employed, and all applications which met the criteria for inclusion were catalogued.

The criteria for inclusion and categorization of the data were as follows: (a) The technique categories used were the same as those reported by Mills (1965). Other methods were not counted, *e.g.* the Horowitz Faces Test, Kahn Test of Symbol Arrangement, and Paragraph Completion. (b) References to past research, surveys and theoretical discussions were

¹ The authors wish to acknowledge the assistance of Dr. Saul Rosenzweig and Dr. Ray Craddock whose seminar provided the impetus for this survey.

² The authors are graduate students at Washington University, St. Louis, Mo.

Table 1
Journals Surveyed, 1947-1965, and Inter-investigator Reliability

Journal	Survey Reliability
American Journal of Orthopsychiatry	100.0%
Journal of Abnormal and Social Psychology ^b	100.0%
Journal of Clinical Psychology	100.0%
Journal of Consulting Psychology	100.0%
Journal of Counseling Psychology ^a	75.0%
Journal of Genetic Psychology	83.3%
Journal of Nervous and Mental Diseases	100.0%
Journal of Personality	100.0%
Psychological Reports ^a	100.0%
Psychosomatic Medicine	88.8%

^a Journal of Counseling Psychology was first published in 1954; Psychological Reports in 1955.

^b Journal of Abnormal and Social Psychology was divided into two separate journals in 1965; Journal of Abnormal Psychology, and the Journal of Personality and Social Psychology. Only the former was surveyed for 1965.

not counted. (c) In a specific study, all different techniques used were counted, but none more than once. (d) Variations of established tests were included under that test, unless a separate category existed for them, *e.g.*, multiple-choice forms of the Rorschach were counted under Rorschach while the Behn Inkblot test had its own category. (e) Word Associations, Sentence Completions, and Human Figure Drawings were listed generically, with the exceptions of the House-Tree-Person, which was listed separately, and the Goodenough, which was not included since it is not considered to be a projective method. (f) The Bender-Gestalt was counted even if projective interpretation was not indicated.

The publications for one year from each journal were independently surveyed by two investigators. This cross check was performed to assess inter-investigator reliability since some subjective

judgment was involved in applying the criteria.

Results and Discussion

The inter-investigator reliability check yielded the percentage agreements listed in Table 1. The total percentage reliability for all ten journals was 98.1.

The absolute number of research citations for each test across all journals for each journal surveyed is given in Table 2. General trends may be observed here. It should be noted that Rorschach use peaked in 1954 (86), TAT in 1955 (47), and Human Figure Drawings in 1955 (23), and these instruments, respectively, outranked all others over the years surveyed. It can be seen that after the tenth ranked Blacky method, the remaining techniques show a very low frequency of utilization over the years.

Rankings were made for each technique over the period 1947-1965, and

Table 2
Frequency of Research Use for 21 Projective Techniques: 1947-1965

Method	Date	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Rorschach		14	20	21	46	52	51	49	86	69	62	40	48	46	33	20	25	23	33	24
TAT		12	5	9	17	18	17	24	21	47	33	26	24	27	19	38	29	34	20	22
Human Fig. Drawings		3	0	2	4	8	9	9	13	23	10	15	14	21	13	12	19	19	18	13
Sentence Completion		6	0	3	1	7	4	2	14	18	12	5	12	12	14	12	9	14	12	17
Bender		2	2	3	4	2	5	2	7	3	10	9	18	12	14	6	9	13	10	13
Gestalt		3	2	0	2	3	4	2	7	12	6	3	4	4	6	1	6	6	14	13
Word Ass.		2	1	1	10	8	5	6	7	9	5	5	3	3	1	5	4	1	2	0
Rosenzweig P.F.		1	2	1	0	1	2	7	2	8	5	1	3	2	5	0	4	1	0	0
House-Tree-Person		0	0	1	7	6	10	3	3	9	2	2	1	1	0	3	1	0	0	0
Szondi		0	0	0	0	1	2	1	5	4	3	1	2	1	3	0	1	6	2	2
Blacky		0	1	0	0	0	0	0	0	1	1	0	2	0	3	2	2	1	6	0
Insight Test		1	2	3	0	1	0	0	3	0	0	0	0	0	1	0	1	0	2	0
Handwriting Analysis		1	0	0	1	1	0	0	1	1	0	0	3	1	2	0	1	0	1	0
Make-A-Picture		0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0
Holtzman Inkblot		0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	0	4	4	3
Mosaic		0	0	0	1	0	0	1	1	0	1	1	2	0	0	1	1	1	2	1
Finger Painting		0	0	1	0	1	1	1	1	2	0	0	1	0	0	0	0	0	1	0
Despert Fables		0	0	0	0	0	0	0	0	1	1	0	1	0	2	0	0	0	1	0
Four Picture Hand Test		0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	1	0	2
Behn Inkblot		0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0
Picture Arr.		0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0

also during the periods 1947-1964, 1947-1951, and 1960-1964, in order to make these data comparable to Mills' (1965). These data, along with those of Mills' (1965), are given in Table 3. The rank-

ings of techniques obtained in the two surveys for the period 1947-1964 reveals essential agreement among the five highest ranking methods. Since Mills' (1965) survey utilized only the *Journal of Pro-*

Table 3
Rankings and Frequency of Projective Techniques in
Research and Comparison Data from Mills (1965)

Projective Technique	1947 - 1965		1947 - 1964		1947 - 1951		1960 - 1964	
	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.
Rorschach	1	782	1 (1) ^a	758	1 (1) ^a	153	2 (1) ^a	134
TAT	2	438	2 (2)	416	2 (2)	63	1 (2)	140
Human Figure Drawings	3	225	3 (3)	212	5 (3)	17	3 (3)	81
Sentence Completion	4	167	4 (4.5)	150	3.5 (4)	21	4 (5)	59
Bender-Gestalt Word Association	5	153	5 (4.5)	140	7 (12)	13	5 (4)	52
Rosenzweig P-F	6	112	6 (12)	99	8 (8)	10	6 (9.5)	46
House - Tree - Person	7	75	7 (10)	74	3.5 (12)	21	11.5 (7.5)	10
Szondi	8	51	8 (11)	51	10 (16.5)	5	7 (11)	16
Blacky	9	46	9 (7)	46	6 (6.5)	15	19 (13)	1
Insight Test	10	34	10 (6)	32	14 (16.5)	1	10 (6)	12
Handwriting Analysis	11	19	11 (19)	19	9 (b)	7	9 (16)	14
Make - A - Picture	12	14	12 (14)	14	11 (12.5)	3	19.5 (16)	4
Holtzman Inkblot	13.5	13	13.5 (8)	13	19 (5)	0	11.5 (13)	10
Mosaic	15	16	13.5 (14)	13	14 (b)	1	8 (9.5)	15
Finger Painting	13.5	13	15 (9)	12	19 (12)	0	19 (19)	1
Despert Fables	16	9	16 (14)	9	19 (6.5)	0	19 (19)	1
Four Picture Test	18	6	17 (20.5)	6	14 (12)	1	15.5 (6)	3
Hand Test	17	7	18 (17)	5	14 (12)	1	13.5 (13)	4
Behn Inkblot	20	3	19.5 (17)	3	19 (b)	0	17 (9.5)	2
Picture Arrangement	19	4	19.5 (17)	3	14 (12)	1	15.5 (19)	3
	21	2	21 (20.5)	2	19 (b)	0	21 (16)	0

a Data in parentheses are from Mills' (1965) study.

b Not ranked by Mills (1965).

jective Techniques and Personality Assessment, it appears that for the most commonly used techniques, this journal reflects accurately the frequency of distribution indicated by the ten journals covered in the present survey. Marked differences between the two sets of ranks occurred for the less frequently used techniques such as the Word Association, Rosenzweig Picture Frustration, House-Tree-Person, Insight Test, and Despert Fables which received higher ranks in the present survey. On the other hand, the Blacky, Make-A-Picture, and Mosaic methods ranked lower than they did in Mills' (1965) study.

It is probable that research involving those techniques ranking below the ten highest, appears primarily in the *Journal of Projective Techniques and Personality Assessment*, since an extremely low frequency of utilization was indicated for these techniques in the ten journals surveyed here.

In order to facilitate replication or further use of the information obtained

absolute frequencies, in addition to ranks, are reported. It is evident from Table 3 that the Rorschach is by far the most frequently used instrument. The Rorschach is followed by the TAT (which surpassed the Rorschach in the period 1960-1964), Human Figure Drawings, Sentence Completion, Bender-Gestalt, Word Association, Rosenzweig P-F, House-Tree-Person, Szondi, and the Blacky. It is interesting to note in comparing Rorschach use in the first five years with the last five years surveyed that utilization has decreased. As was true in Mills' (1965) study, the most frequently used research techniques have changed very little over the years surveyed. A dramatic exception to this can be noted in the case of the Szondi which dropped from a rank of 6 in the first five years to a rank of 19 in the last five years. It should also be observed that techniques represented by a single test are not directly comparable to those (like Sentence Completion) which are counted generically.

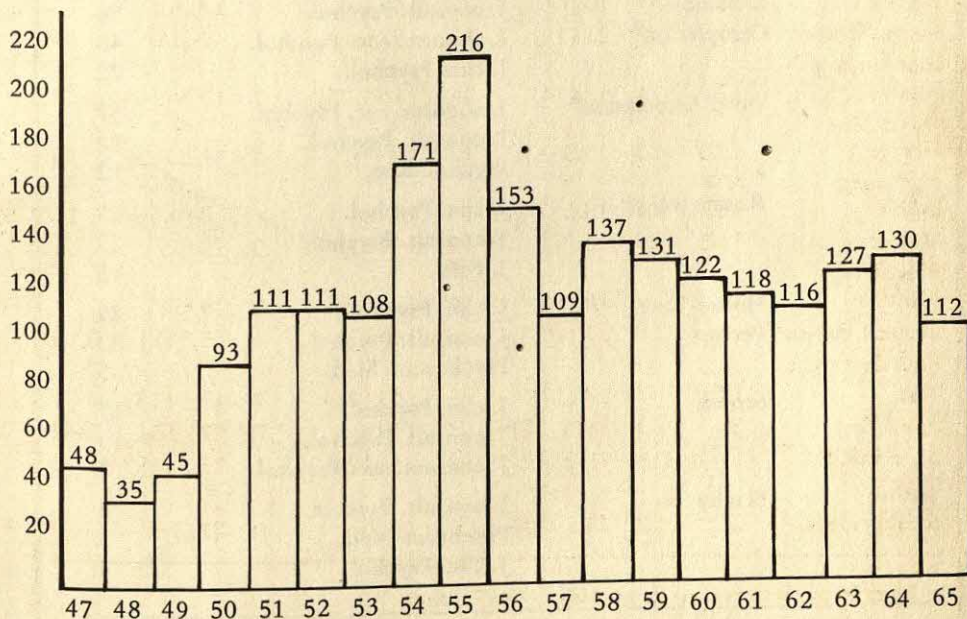


Figure 1. Frequency of Projective Techniques in Research: 1947-1965

A year by year analysis of the data revealed some general trends in test research. As shown in Figure 1, the peak frequency was reached in 1955. Research

dropped rather sharply in 1956 and 1957, then maintained a fairly stable plateau to the present. Numerous speculative hypotheses might be entertained to

Table 4

The Ten Most Commonly Used Projective Techniques, 1947 - 1965,
and the Three Journals in Which They Most Frequently Appeared

Rank	Projective	Journal	Frequency
1	Rorschach ^a	J. consult. Psychol.	267
		J. clin. Psychol.	157
		J. abnorm. soc. Psychol.	104
2	TAT ^a	J. abnorm. soc. Psychol.	159
		J. consult. Psychol.	118
		J. Pers.	60
3	Human Figure Drawings ^a	J. consult. Psychol.	64
		J. clin. Psychol.	58
		Psychosom. Med.	27
4	Bender-Gestalt	J. consult. Psychol.	60
		J. clin. Psychol.	58
		J. abnorm. soc. Psychol.	14
5	Sentence Completion ^a	J. consult. Psychol.	56
		J. abnorm. soc. Psychol.	43
		J. clin. Psychol.	22
6	Word Association ^a	J. abnorm. soc. Psychol.	57
		J. consult. Psychol.	12
		Psychol. Rep.	12
7	Rosenzweig P-F	J. clin. Psychol.	29
		J. consult. Psychol.	23
		J. Pers.	15
8	House-Tree - Person	J. clin. Psychol.	29
		J. consult. Psychol.	23
		Psychosom. Med.	5
9	Szondi	J. clin. Psychol.	17
		J. consult. Psychol.	13
		J. abnorm. soc. Psychol.	7
10	Blacky	J. consult. Psychol.	8
		Psychsom. Med.	5
		J. clin. Psychol.	4

^aA generic class of techniques as contrasted with a single test.

account for these trends. As was previously mentioned, the research use of projective methods typically focuses on either the development and validation of the method itself or on a substantive problem which utilizes the method as a tool. One might conceive of the data in Figure 1 as representing the shifting emphasis on these two types of research. The earlier years probably represent primarily validation studies with a limited number of applications (since many of the methods were still in the developmental stage during this time); the peak years, a time of emphasis on both types of research; and the relatively stable plateau in the later years, a primary emphasis on applications with little validation work being performed. Another factor which may have influenced the 1955 peak and subsequent decline is recent emphasis on and the press for greater speed in assessment, prompted by overcrowded and expanding mental health facilities which

tend to militate against time-consuming projective methods like the Rorschach and the TAT.

Since researchers and clinicians alike often have occasion to review the literature on the various projective techniques, the ten most commonly used methods and the three journals in which they most frequently appear are listed in Table 4.

REFERENCES

- Mills, H. D. The research use of projective techniques: A seventeen year survey. *Journal of Projective Techniques and Personality Assessment*, 1965, 29, 513-515.
- Sundberg, N. D. The practice of psychological testing in clinical services in the United States. *American Psychologist*, 1961, 16, 79-83.
- David A. Crenshaw
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University City, Missouri 63132
- Received August 26, 1967
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Projective Tests in Vocational Counseling¹

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Summary: In Switzerland, the role of projective techniques in vocational counseling is currently under debate. The author of a recent book on the Zulliger-test—a three card, Rorschach-type instrument—claims to have identified a number of syndromes that reflect vocationally relevant personality characteristics. His results are criticized on methodological grounds, and an alternative approach is proposed that emphasizes the expressive and essentially idiographic nature of projective test records. Their main contribution is to permit a better understanding of client motivations and attitudes, resulting in a more effective counseling interaction. Accordingly, these tests should be validated against attitudinal criteria and measures of counseling progress rather than long-term vocational behavior and success on the job.

In the field of vocational counseling, as it is now practiced in Switzerland, few subjects are more hotly debated than is the use of projective tests. Given the long tradition of projective testing in this country, and the more recent tendency to interpret the counseling process in psychological terms (Schmid, 1963), it is not surprising that counselors of different backgrounds and levels of competence turn more and more toward these instruments. There is an attempt to exploit the tests' evaluative potential for guidance purposes. Since training opportunities in psychological counseling are practically non-existent and generally recognized standards for admission to the profession lacking, there are obvious problems in such a development, as Pulver has recently pointed out (Pulver, 1965). Only a small minority of Swiss counselors who are now active would meet reasonable training requirements for a user of projective

tests, such as those formulated in the APA's *Technical recommendations for psychological tests and diagnostic techniques* (1954).

Under these circumstances, actual testing practice depends to an even greater extent than would otherwise be the case on the quality and lucidity of available textbooks. Fortunately, a few have been published in German that leave little to be desired from a didactic point-of-view, to mention only such model texts as those by Meili (1965), Böhm (1967), and Hiltmann (1966), which have served as reliable guides to innumerable beginners in diagnostic psychology.

These and similar texts have been addressed however to readers motivated by a more general psychological, if not psychiatric interest. There is a complete absence of suitable introductory materials designed for vocational counselors, meeting their need to learn about the application and usefulness of these instruments in the counseling situation. The equivalents of such indispensable American books as Super & Crites' *Appraising Vocational Fitness* (1962) and Berdie, Layton, Swanson, & Hagenah's *Testing in Guidance and Counseling* (1963) in the German language are missing. Presumably, there are simply no authors who are familiar with counseling procedures and at the same time knowledgeable

¹ This is a condensed version of a paper in German originally published in the Swiss vocational counseling journal, *Berufsberatung und Berufsbildung*, 1966, 51, pp. 307-317. The second part was revised to include some points of special interest to American readers.

² The author is a Swiss psychologist with both European and American training. He holds a Ph.D. in psychology from the University of Pittsburgh (1958) and is in private practice in Zürich as a counselor for college students and a consultant in the field of management selection.

enough in the diagnostic area to be able to critically sift the evidence and present it to the practitioner. Even in the professional journals, one looks in vain for research reports that bring the two fields together, providing guidelines or defining the limits of projective test interpretation in a counseling context.

Vocational counselors therefore have looked forward with great expectation to the publication of a book by their colleague Dr. Heinz Richard Schmid, entitled *Der Zulliger-Test in der Berufsberatung* (The Zulliger-test in vocational counseling) (1965). The so-called Z-test is a three-card inkblot test developed by the late child analyst Hans Zulliger, who was also responsible for the publication of the Behn-Rorschach series. His own instrument was used for purposes of officer selection in the Swiss army during World War II. It owes its popularity in Europe to brevity and the speed and ease of administration, while supposedly yielding material of comparable depth as is typically obtained with a full-scale Rorschach.

Given the importance of the time factor in many practical counseling situations, the choice of this test for study seemed to be a fortunate one. As the author was able to consult with several authorities on theory and statistics, there was every reason to expect an intelligent and careful product. Regrettably, this hope has not been fulfilled. A brief analysis of the shortcomings of the work should acquaint the American reader with the methodological difficulties which still grip much of European psychology, and is followed by a discussion of some basic problems inherent in projective test validation.

In the early pages of the book, two empirical research studies are reported. A first experiment was designed to permit a comparison of Ro- and Z-test results, and thus to establish some equivalent basis for the two tests. The sample used for

this comparison was badly chosen and ill-defined, consisting simply of two hundred clients tested by Dr. Zulliger with both instruments in his private clinical practice and selected according to unknown rules. Unperturbed by any doubts as to the representativeness of his sample, the author proceeded to compute significance-of-difference tests, probable errors, and similar statistics of an inferential nature. He based one of his major tables on "average values" in each group which he had arbitrarily determined. In interpreting their distribution, he did not even recognize the influence of number of categories in rows and columns on the size of percentage frequencies in different cells! Small wonder then that he arrived at positive conclusions, which completely outrace the evidence. He extrapolates to "adolescents", "youths", and even "human beings" in general where in fact only the patients of an individual psychotherapist were involved.

The second experiment represented an attempt to assess the concurrent validity of the Zulliger-test using vocational criteria. Again, there were serious methodological errors committed, including the unwarranted assumption of normality of the variable distributions and disregard for the ubiquitous dependence of scores on total R. Whether for linguistic or other reasons, Cronbach's (1965) famous paper on *Statistical Methods Applied to Rorschach Scores* evidently was not accessible to the author.

* It was the sampling procedure, however, which proved to be the main stumbling bloc. Comparisons were made simultaneously between five groups of Swiss apprentices (chimney sweepers, butchers, hairdressers, technical draftsmen, and mechanics) and one group of experienced German teachers preparing for an advanced course. As it turned out, the majority of the statistically reliable differences happened to involve

the last-named group, rendering the overall significance of the findings questionable for the purpose of vocational differentiation. His previous confounding of variables notwithstanding, the author felt entitled to extract from his data some astonishing ex-post-facto conclusions. The higher frequency of shading responses among the German teachers was attributed by him to their having been exposed to the War, and the somewhat elevated H% of the butchers to "sublimation resulting from frequent sadistic handling of animals..."

After this venture into the treacherous field of empirical research, Dr. Schmid evidently felt sufficiently strengthened in his belief in the Z-test to direct his attention to weightier theoretical matters. Freely sampling and interpreting a body of predominantly German psychological literature, he develops what might be called a "system of vocationally relevant personality factors," including physical, sensori-motor, intellectual, and emotional components of the human organism as described by traditional systematic psychology. In doing so, he makes extensive use of a system of coordinates, composed of two bipolar and assumedly orthogonal variables that relate to phenomenological aspects of the person and serve as a framework for the description of predominant thinking modes as well as of basic vocational inclinations. The resulting categories are then incorporated into a "personality profile" made up of a number of nine-point rating scales. As a last step, various Z-test syndromes are described that are said to correspond to these rating scales. In many instances, no indications whatsoever are given as to their origin, and for none of them is any attempt at validation reported. The author does not seem to realize that over dozens of pages, he is actually discussing hypotheses and not observed data.

There is little likelihood that

American readers will now rush to the nearest bookstore to lay hands on H. R. Schmid's Z-test syndromes as the ultimate answer to the problem of assessing vocational personality characteristics. For some European counseling and clinical circles with their less developed methodological awareness and lack of hard-headed empiricist tradition, such a danger could prove more real. Despite the popularity which projective tests enjoy here and their widespread practical application, it can hardly be said that sufficient energy is being invested in their scientific evaluation. Foreign studies that question their predictive validity, such as the classical ones by the USAAF psychology team (Guilford & Lacey, 1947), Kelly & Fiske (1951), Holt & Luborsky (1958), and Meehl (1954) still seem to be largely unknown, at least in the German speaking areas. Among specialists who do take them into account, the tendency seems to be to minimize their importance by explaining the dearth of significant correlations as a result of technically imperfect criteria (Moser, 1965); an argument which would seem to hold up in the case of some, but certainly not all relevant investigations. The warnings pronounced by such an eminent authority as P.E. Vernon suggesting that projectives may lessen rather than increase predictive utility in vocational assessment (Vernon, 1964) are either not heard or not heeded. It is therefore necessary to point again and again to the essential uncertainty of predictions based on projective test data, even if this attitude should be misjudged by some as bespeaking a bias against these techniques.

The reviewer would happily testify to the usefulness of projective methods in the practical counseling situation and emphasize the desirability of incorporating them into any personality assessment that is designed with comprehensiveness in mind. The question is, in what

function and with what kind of theoretical justification can this be done? The answer available as of now is certainly incomplete, but might prove a useful starting point, stimulating others to expand on it.

Perhaps due to Behaviorism, which tended to treat the different varieties of human behavior in a rather uniform fashion, reducing, with Watson, consciousness to mere "verbal responses," American theoretical psychology with a few notable exceptions has overlooked a distinction that comes naturally and is fundamental to much European thinking: *the distinction between instrumental and expressive behavior*. In its modern form, this distinction owes its description to the philosopher Ludwig Klages, who developed the first "Ausdruckskunde" (theory of expressive behavior) (Klages, 1964) and, by no coincidence, was largely responsible for the development of German graphology. The new *Handbuch der Psychologie* published in Göttingen (Thomae, 1965) devotes an entire volume out of twelve to "Ausdruckspsychologie," something that could hardly be imagined for a similar American work as, for instance, Koch's encyclopedic series (Koch, 1959).

To trace in detail the differences between instrumental and expressive behavior and establish their respective roles in the adaptive process is outside the purpose of this review. The distinction can easily be illustrated, however, by pointing to the difference between performance and projective tests; for it seems likely that this is but a reflection on the technical level of the more fundamental difference between instrumental and expressive behaviors. Performance tests require the individual to manipulate his environment, be it in an explicit or in a covert, symbolic form, with the aim of achieving a specific goal; while projective techniques are designed to elicit selective and fantasy responses

that are of interest not so much for their efficiency as for what they reveal about the inner orientation of the individual concerned toward himself and his environment.

If the two types of tests in fact have different aims and purposes, one would expect that they be validated against different criteria as well. In the case of performance tests, achievement in real-life situations will qualify as the logical choice. With projective tests, *the criterion should be attitudinal*; i.e. relate to the ideas, feelings and motives that characterize the "inner person" and find their symbolic expression in the subject's responses to the unstructured stimulus. This requirement has been violated in a surprising number of instances by investigators naively assuming a close, if not perfect relationship between inner experience and overt (instrumental) behavior. The failure to pay attention to this epistemological distinction, and not merely the technical imperfection of criteria, is believed to account for a large proportion of the insignificant validity coefficients obtained and reported. The temptation for such neglect of course is strong, given the difficulty in locating and identifying the "real attitudes" that could serve as a reliable yardstick. Projective tests are "tests in search of a criterion" indeed.

They are consequently not measures that lend themselves readily to the prediction of future behavior, at least not in an actuarial sense of the term. H. R. Schmid's attempt to define Z-test syndromes to be used for the prediction of manifest vocational behavior thus would seem to be doomed to failure even if it were carried out in a technically much more competent way. Whether a person should enter academic or practical training, whether he is better fitted for a technical or a commercial trade, whether he has the potential to become a good supervisor or not—these are hardly questions

that can be answered in any simple and straightforward manner on the basis of projective test information. The counselor and his client will be well advised to concentrate on other, more relevant information when attempting to compare alternative courses of action and the chances of success that are attached to them.

A good vocational decision is not only a matter of correctly evaluating objective facts, however, but may in addition require a clarification of underlying motivations and attitudes (Schmid, 1965). In this wise, the projective tests are invaluable aids for eliciting the subject's deeper inclinations and exploring his affective life. They may reveal the origins of previously unexplained vocational strivings and fantasies, as well as pinpoint the defenses that so far have prevented the decision-making process from commencing or proceeding to a satisfactory conclusion. Permitting a scrutiny and discussion of materials that otherwise might not have been accessible except through prolonged disclosure, they enrich the counseling relationship and advance the client's understanding of himself.

As is true of the analytic interview, which of course is also of a largely expressive nature, the specific content of projective test records is highly unpredictable. Both depend, in large measure, on accidental factors and personal vagaries that may or may not be diagnostically relevant. Systematic between-subject comparisons are therefore not very meaningful. Every individual seems in fact to use his own personal code which often cannot be broken by applying any predetermined set of keys. An "idiographic" approach is indicated that emphasizes individual context and attempts to infer the nature of the rules from recurring motives or "themes" as well as extraneous sources of evidence. This is what German psychologists have always referred to as the intuitive act of "Verstehen," an operation as appro-

priate in dealing with expressive behavior as is deductive analysis in the study of instrumental performance.

How can projective test data be better understood and exploited more fully for counseling purposes? What kind of research is needed to assess "inner" validity, i.e., the test's correlation with attitudinal and motivational variables? The usual casuistic approach has obvious limitations, due to informality and its tendency to confound the different sources of information about the client. For better control, it would seem desirable to segment the counseling process, arranging the performance tests, interest inventories, personality scales, projective instruments, etc., in some definite order and interspersing them with structured interviews, Q-sorts, and questionnaires specifically designed to reflect the affective situation and measure counseling progress. In this way, it should be possible to isolate the contribution of projective tests, study the effect of interpretations based on them, and ultimately ascertain the relevance of various signs and configurations for an adequate understanding of the individual by the counselor and himself. Such a strategy of investigation would seem to combine the requirements of flexibility and control in a realistic manner. It therefore holds more promise than does a purely diagnostic approach with its emphasis on statistically derived syndromes, or a casuistic one, the pitfalls of which are only too well known. Perhaps it could be adopted by some American center with the means at its disposal to engage in this kind of research.

REFERENCES

- American Psychological Association. Technical recommendations for psychological tests and diagnostic techniques. *Psychological Bulletin*, 1954, 51, No 2 (Supplement).
- Berdie, R. F., Layton, W. L., Swanson, E. O., & Hagenah, T. *Testing in guidance and counseling*. New York: McGraw-Hill, 1963.
- Bohm, E. *Lehrbuch der Rorschach-Psychodiagnostik*. Bern: Hans Huber, 1967 (3. Auflage).
- Cronbach, L. J. Statistical methods applied to Ror-

- schach scores: A review. *Psychological Bulletin*, 1949, 46, 393-429. Also in Murstein, B. I. (Ed.) *Handbook of projective techniques*. New York: Basic Books, 1965.
- Guilford, J. P. & Lacey, J. I. *Printed classification tests*. Washington, D.C.: Government Printing Office, 1947.
- Hiltmann, H. *Kompendium der psychodiagnostischen Tests*. Bern: Hans Huber, 1966 (2. Auflage).
- Holt, R. R. & Luborsky, L. *Personality patterns of psychiatrists*. New York: Basic Books, 1958.
- Kelly, E. L. & Fiske, D. W. *The prediction of performance in clinical psychology*. Ann Arbor, Mich.: University of Michigan Press, 1951.
- Klages, L. *Grundlegung der Wissenschaft vom Ausdruck*. Bonn: H. Bouvier, 1964 (8. Auflage).
- Koch, S. *Psychology: A study of a science* (7 vols.) New York: McGraw-Hill, 1959.
- Meehl, P. E. *Clinical versus statistical prediction*. Minneapolis: University of Minnesota Press, 1954.
- Meili, R. *Lehrbuch der psychologischen Diagnostik*. Bern: Hans Huber, 1965 (5. Auflage).
- Moser, U. Die Projektionstests in der Psychiatrie. *Schweizerische Zeitschrift für Psychologie*, 1965, 24, 114-122.
- Pulver, U. Zur psychologischen Ausbildung der Berufsberater in der Schweiz. *Berufsberatung und Berufsbildung*, 1965, 49, 267-273.
- Schmid, F. W. Psychologische Berufsberatung: Entwicklungstendenzen, Gefahren, Ziele. *Berufsberatung und Berufsbildung*, 1963, 48, 3-12.
- Schmid, F. W. Ueber Sinn und Bedeutung des Beratungsgesprächs. In Pulver, U. (Hg.) *Auf dem Weg zum Studium*. Zürich: Zentralsekretariat für Berufsberatung, 1966, S. 71-79. Translated from: The interview as a means of evaluating career fitness. *Journal of Psychiatric Nursing*, 1965, 5, 401-412.
- Schmid, H. R. *Der Zulliger-Test in der Berufsberatung*. Bern: Hans Huber, 1965.
- Super, D. E. & Crites, J. C. *Appraising vocational fitness*. New York: Harper & Row, 1962 (Revised edition).
- Thomae, H. (Hg.) *Handbuch der Psychologie* (12 Bde.) Göttingen. C. J. Hogrefe, 1965/(Bd. 5, Ausdruckspsychologie).
- Vernon, P. E. *Personality assessment: A critical survey*. London: Methuen, 1964.

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Studies of Rorschach Content: A Review of Research Literature Part III: Theoretical Formulations¹

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Summary: The accumulated yield of Rorschach content research is considered in relation to experimental investigations and theoretical formulations that have originated upon the convergence of the domains of perception, cognition, and personality. The act of meaningfully labeling inkblot stimuli involves perceptual fitting of personality-determined hypotheses, communicated in a specific interpersonal context. Accordingly, perceptual, personality, and social influences upon attribution of content to Rorschach stimuli are discussed. A variety of "false positives" and "false negatives" reduce the degree of correspondence between Rorschach content variables and real-life individual characteristics. Several of the possible sources of the "false positives" and "false negatives" are traced to stylistic, defensive, and other mediating factors that are interposed between the presence of a motivational or personality characteristic and its expression through content on the Rorschach test.

The conclusion was reached in the preceding portion of our survey (Haley, Draguns, and Phillips, 1967), that a significant, if imperfect, relationship exists between scoring on some of the intensively studied Rorschach content indicators on the one hand and characteristic behavior patterns on the other. How are we to account for this relationship and for its imperfections? This paper is devoted to a consideration of these issues. Specifically, we shall examine the research evidence relevant to the resolution of two questions. These are: (1) What factors lead the person to develop one set of meaningful responses rather than another, to ambiguous stimuli such as the Rorschach inkblots, and (2) What are the variables that facilitate or impede the process of labeling such stimuli?

As formulated, these issues are not unique to Rorschach research. Rather, they are homologous to some of the basic problems which have occupied experimentalists and theoreticians in the field of perception and cognition. In particular, they correspond to issues explored under the rubrics of the "new look" in perception, functionalism, and hypothesis theory (Allport, 1955; Brown, 1961; Canestrari, 1955), all of which have come to the fore within the last twenty years. Consequently, we shall review findings, methods, and insights accumulated in the sphere of perception-personality research insofar as they shed light on the two questions just formulated.

The investment of Rorschach inkblots with meaning is far from being an exclusively perceptual act, or an "indicator response" in the sense in which Bartley (1958), Goldiamond (1962), and Gibson (1963, 1966) use these terms. The Italian psychologist, Dalla Volta (1946), has coined the term, "ambiguous perception," to refer to meaningful responses to diffuse configurations, such as markings

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on the walls, shadows, clouds, and ink-blot, as they may occur within a natural, clinical, or laboratory environment. In contrast to the compelling thing-quality of the prototypical perceptual act, attributing meaning to these kinds of multifaceted stimuli is done on a conditional, "as if", basis. Vanishingly rare instances excepted, even a disturbed schizophrenic does not "see" a face, an animal, or a pelvis in a Rorschach card; rather, he operates on the basis of an assumed analogy.

As Dalla Volta (1946) has pointed out, this activity has referents and analogues in real-life behavior. Moreover, this mixture of perceptual seeing and cognitive inferring has a well-established place in a number of theoretical systems. Gestalt psychologists (e.g., Metzger, 1953) speak of "fundamental qualities" (*Wesenseigenschaften*) that are perceived over and above the objective character of a configuration; psychologists of the behavioristic persuasion refer to the same phenomenon under the name of "connotative meaning" (Osgood, Tannenbaum & Suci, 1957).

Yet, study of this variety of behavior that falls in the borderlands of perception, imagination, and cognition has, until recently, been relatively neglected by students of perception, or even by those of perception and personality. At the risk of oversimplification, one might say that traditional perceptual research, before the New Look upheaval, was focused upon the contribution of stimulus factors toward the shaping of the perceptual act. The thrust of more recent trends of perceptual experimentation has been pointed, primarily, toward the exploration of the impact of the externally manipulated, short range influences upon perceptual activity. More enduring and quasi-permanent personality influences have been only subsidiary objects of attention of the directive state and hypothesis theorists (Allport, 1955; Canestrari, 1955; Vernon, 1955). Consequently, the accumulated yield of empirical Rorschach content research, chaotic and complex though it may be, can potentially be used to fill this gap in the experimental perception-personality literature. Yet, as

has been mentioned, the use of Rorschach content research in this manner is obstructed by the complexity of processes that contribute to a Rorschach response. In particular, one can isolate three simultaneously occurring activities that shape and determine the Rorschach response: (1) the stimulus, (2) the respondent, and (3) interpersonal communication.

The subsequent discussion is organized around each of these three sources of influence upon the Rorschach response.

Perceptual Fitting: Stimulus Factors

Traditional projective test theory assumed that Rorschach inkblots serve as a blank screen upon which personality characteristics are effortlessly and automatically projected. Proceeding from this premise, projective test behavior was often considered as an activity *sui generis*, unrelated to and distinct from situations to which general laws of perception and cognition apply.

This viewpoint has been decisively dispelled by the recent experimental contributions of Bijou and Kenny (1951), Kenny (1964), and Murstein (1958, 1960, 1963). Although, much of the above work is not based on the study of Rorschach inkblots, it is entirely pertinent to the issues at hand. In particular, two relevant conclusions may be drawn from these investigators' findings. For one, it has been conclusively established that projective test stimuli are not maximally or completely ambiguous. Further, it has been demonstrated that wholly amorphous stimuli are not conducive to the externalization of personally revealing motive states and themes. Instead experimental results (Draguns, 1967; Flavell & Draguns, 1957; Linschoten, 1959) suggest that affect arousing properties accrue particularly to stimuli that are presented just below the level of recognition and which, consequently, may be described as being only slightly ambiguous. These results suggest the need for focusing on the stimulus value or demand characteristics of projective test materials, including the Rorschach inkblots.

A number of studies, some recent and some going back to the earlier periods of

Rorschach investigation, have, in fact, attempted to analyze the "demand characteristics" or "stimulus value" of the Rorschach inkblots. Thus, European textbooks (e.g., Alcock, 1963; Bohm, 1958) devote considerable space to the interpretive meanings of "shock" that may be experienced in response to specific Rorschach cards, or blot details. Closely allied to this approach is the orientation of those authors, American (e.g., Brown, 1953; Lindner, 1944; 1946) and foreign (e.g., Groffmann, 1963; Mérei, 1953; Monod, 1963; Péchoux, 1959), who have assigned specific interpretive meaning to particular Rorschach stimuli. This work is based largely on clinical evidence; in a more systematic manner, the insights derived by the advocates of these approaches have been recently put to test by means of the semantic differential (e.g., Little, 1959; Rabin, 1959; Zax & Loiselle, 1960). This research has represented one of the most active and dynamic areas of Rorschach investigation. Other methods, borrowed from the experimental laboratory study of perception and concerned with nonverbal responses to inkblots, have seen less use. These include studies of G.S.R. responses to Rorschach inkblots (De Renzi, 1956), those of eye movements (Nikelly, 1961) and of viewing time (Bakan & Brown, 1967). In addition to these experimental techniques, we would like to refer to an approach that has demonstrated its usefulness in other areas of projective test research, although it has been only sparingly adopted in the study of the stimulus value of Rorschach blots. This approach rests upon the concepts of information theory (Attneave, 1954; Kenny, 1964) and involves the empirical calculation of the ambiguity values of stimuli based upon the variety and frequency of responses produced within a given population.

Most of the studies reviewed in our earlier papers (Draguns, Haley, & Phillips, 1967; Haley et al., 1967) were based upon a simple tabulation of content scores throughout the Rorschach protocol. Insights gained through use of specialized techniques for exploring Rorschach stimulus values suggest that more

discriminating findings might be obtained if content indices were tabulated separately for individual cards and for blot areas whose power to evoke a given variety of content has been established. The systematic application of this laborious and time-consuming procedure would involve careful scaling of the separated inkblots, and of many areas within them, for the themes, motives, signs, or categories to be found within the protocol. Once this is done, Rorschach investigation could operate explicitly with the notion of "thresholds", that correspond to differential expectations for individual contents that vary across cards and across areas. Bruner's (1957) "hypothesis theory" of perception, as well as the "signal detection" theory of Swets, Tanner, and Birdsall (1961), are congruent with this proposition. They postulate that the strength of a given preoccupation increases the readiness for, facilitates the detection process, and lowers the threshold for, percepts that correspond to that expectation. These statements have been corroborated in a number of studies of the "perceptual defense" (Brown, 1961) or "microgenetic" (Kragh, 1960) variety in which originally impoverished or indistinct stimuli are gradually brought into view.

One of the features of the Rorschach blots is that they provide a wide range of stimulus components that, to differing degrees, favor or obstruct the expression of a host of perceptual-cognitive hypotheses. Based on their relative frequency of appearance certain responses appear to fit routinely and easily to their blot stimuli, others are imposed only with great effort upon their locations. Corresponding to this formulation the following implications can be teased out from perceptual hypothesis theory that are applicable to both research on, and interpretation of, Rorschach content: (1) The rarer a variety of content, the stronger the hypothesis that has provoked it; the interpretive value of sex response, for example, which are relatively rare, is as a rule, higher than that of an animal response, which are very common², (2) The more

² In this connection, Edmonston and Griffith

unusual the area for a particular kind of content, the stronger the hypothesis favoring that variety of content, thus, "blood" on Card I is interpretively more significant than "blood" on Card II. (3) The greater the intensity of affect accompanying a response, the stronger the hypothesis that underlies the response; "two bears with bloody paws, fighting" is more revealing than "two bears facing each other". (4) The more elaborate the percept, the greater the strength of the hypothesis that has provoked it; "an atomic explosion over a large American city" tells us more about an individual's preoccupation than simply "an explosion". (5) Finally, the frequency of a particular response or theme reflects the strength of a hypothesis; five sex responses imply a more overriding perceptual-cognitive state than one such response.

The points just made are, of course, far from novel; they represent the recasting of the interpretive operations of the experienced clinician into the concepts of Bruner's hypothesis theory. Yet of the five indices of hypothesis strength just listed, Rorschach researchers have disproportionately relied upon frequency; some of the failures to obtain results which discriminate between behaviorally different populations may lie in the failure to take into account the other four propositions that also follow from this theory.

Scaling of the kind introduced by DeVos (1952), Elizur (1949), Finney (1955), and Murstein (1956) broadens the scope of Rorschach scoring by incorporating intensity and, in part, cognitive elaboration. But the remaining dimensions that, in our view, reflect hypothesis strength still remain on the margins of formal Rorschach content research. An attempt to relate stimulus value and response appropriateness has been undertaken only in studies of the blot of the power of different locations to elicit sex responses. The particulars of this work have been surveyed earlier (Haley et al., 1967).

(1958) have pointed out that man-made, geometrically shaped objects are more difficult to "see" on the Rorschach than the organic forms of nature.

In this section we have been concerned with blot structure as a characteristic that "filters" the manifestation of different content within the Rorschach protocol. In addition, we have considered "hypotheses" within the individual's cognitive structure that mediate the appearance of meaningful percepts. We have not yet discussed the possible sources of these hypotheses within the psychology of the individual. The next section represents our attempt to come to grips with this basic issue. To do so, we must transcend the largely perceptual aspect of attributing meaning to Rorschach inkblots and must deal with the connotative and symbolizing activity that enters into the Rorschach response.

Sources of Hypotheses:

Personality Factors

Where do the hypotheses that underlie Rorschach responses arise? In broad and general terms, this question is easily answered; we may plausibly refer to personality, in the sense of the individual's unique accumulation of past experience, as the fountainhead of all Rorschach percepts. This answer, however, begs another, and more specific, question: given the variety and scope of impressions assembled during an individual's lifetime, what factors govern the selection of impressions that are actually imposed upon the inkblots?

When we considered the role of the stimulus characteristics we saw that diverse contents are not equally appropriate to the various Rorschach details. But, as stimulus factors are constant and responses variable, other influences must of necessity enter into determining the various individual responses to given blot structure. In the theoretical literature, several subjective determinants of Rorschach responses have been noted. We shall evaluate these supposed reflections of individual personality. Specifically, we will deal with familiarity, drive states, conflict, style, and defense mechanisms as possible bases for those hypotheses that govern the production of Rorschach responses.

Familiarity

On the basis of a non-dynamic, "com-

mon sense" approach to the psychology of perception, one would assume that the best known objects of experience would serve as the most likely and therefore most frequent sources of hypotheses in the production of Rorschach responses. To a limited extent, this is indeed the case. We know, for instance, that intercultural differences in Rorschach content (Hallowell, 1956; Lindzey, 1961) roughly parallel differences in the presence of particular objects in the daily lives within the daily habitat which characterize various cultures. In Ifaluk, for instance, A% for adults reaches the improbably low figure of 18.7, as a consequence of extremely limited range of animal life found on that Micronesian island. But, in spite of such striking instances of intercultural variations in content occurrence as a function of culturally mediated differences in experience, only a small share of the total Rorschach variance is thus accounted for. If familiarity were the dominant or the sole concern, the sociological variables of culture, ethnicity, class, and occupation would be the principal sources of interpersonal variation in Rorschach content. While some of the above social groupings are indeed associated with characteristic Rorschach content manifestations (Draguns, et al., 1967), they are far from exhausting the scope and variety of responses that the Rorschach cards elicit. Even in the realm of social class and occupation, characteristic Rorschach contents appear to be more directly reflective of personality variables than of the day-to-day social or occupational environment. Höhn (1959), in particular, emphasized this point in reference to occupations.

Drive State

The effects of motivational variables, experimentally manipulated or embedded within the subjects' personalities, constitute one of the most intensively investigated topics within the realm of Rorschach content research. Out of the imposing accumulation of such work (Draguns et al., 1967; Haley et al., 1967), the recognition has emerged that the Rorschach inkblots are an unclear and uncertain screen for the projection of

externally induced or constantly operative drive states; typically, a significant and positive relationship has been obtained between motivational indices and their purported reflections in Rorschach content. This association, however, has been far from even approaching correspondence. Accordingly, two relationships remain to be discussed and their modulations to be formulated. These concern the association between Rorschach manifestations and motive state and that between the same Rorschach variables and external, real-life behavior. The former problem can be studied with the help of such operational indicators, as psychophysiological detected arousal level, hours of deprivation, and prospect and proximity of need-fulfillment. The latter has been investigated by means of a wide range of techniques that permit us to assess referents of anxious, dependent, aggressive, or other drive-related content in the person's actual life.

The triad of perception, motivation, and behavior which we have introduced has been one of the foremost preoccupations of the functionalist and new-look emphases in laboratory perceptual research. From this work, as well as from the related Rorschach studies, it is possible to glean a number of generalizations as to the modulating influence of two classes of variables: those of internal, motivational character and those concerned with the likelihood of translation of drive state into behavioral act.

Within the former domain, that of motivational variables, a number of influences can be specified. These are: intensity of drive (Lazarus, 1961); prospect of its gratification (Saugstad, 1966) and duration of the motive state (Guillaumin & Guyotat, 1961). The effects of these variables upon Rorschach performance may, moreover, be non-linear and subject to complex interactions. Drive intensity, for instance has been repeatedly found to be reflected in the form of a U-curve in test variables (Lazarus, 1961), with moderate drive levels being most productive of the relevant content themes.

In any kind of a motivational state, however, only a fraction of the total num-

ber of Rorschach responses represents a direct expression of the overriding motivational concern. An attempt to explain this observation causes us to pose two problems: (1) Why are drives expressed within the Rorschach protocol, and (2) What is the motivational significance of responses which, in the typical test record, are devoid of a manifest need-fulfilling character?

In relation to the first question, let us adopt for the moment the plausible, if radical, view that all Rorschach test responses constitute a wish fulfillment whether direct or indirect, camouflaged or undisguised. Logically, we can then deduce that only unfulfilled and active needs find representation within the Rorschach protocol. The acceptance of this statement poses no problem as far as interpretation of experimentally manipulated or real-life, temporary drive states are concerned. Whether the motivational referent is hostility, hunger, or sexual arousal, by definition the eliciting conditions in these studies are such as to prevent its effective consummation. The issue is, however, considerably more complex as we turn to the more permanent motivational states. In the typical study of these variables, whether they be directly motivational in nature, e.g. aggression, dependency, anxiety, or inferentially linked to motivation through a symptomatic state, e.g. drug addiction, alcoholism, homosexuality, Rorschach investigators have included within their groups two kinds of subjects: those who have at their disposal adequate outlets for the expression of the motive state in question and those who lack such avenues. For the sake of brevity, we may refer to these types of subjects as "satiated" and "frustrated" respectively. If we accept the wish fulfillment hypothesis, we would not expect an unusually high number reflecting a given motive state within the satiated group. Among frustrated individuals, however, the Rorschach inkblots would represent a means for the vicarious expression of an as yet unfulfilled wish. In terms of experimental design, satiated subjects would slant the results of the investigation in the direction of "false negatives", that is, they

would behave in a particular clinically meaningful way, yet they would not reveal this fact in their Rorschach contents. Frustrated subjects would not act in the direction toward which they were motivated, although this motive state would be expressed in their Rorschach protocols. They would be classed as "false positives".

Clearly, a simple and direct wish fulfillment hypothesis for Rorschach content is untenable. It runs counter to all the findings reported in previous portions of this review about clinically characteristic behaviors and characteristic Rorschach contents. Those subjects for whom this relationship obtains constitute the category of "true positives". A final category can logically be designated as "true negatives", composed of those individuals for whom a given motive state, as expressed in Rorschach content, and its associated behaviors are both absent.

True negatives are simple to account for. The cases of false negatives and false positives are much more difficult to explain in terms of a perceptual theory which attempts to relate motive state and behavior. Do false positives and true positives share features outside of the Rorschach protocol? Is there any similarity in the behavioral characteristics of true and false negatives? Weiss and Winnik (1963) and Kunkel (1963) have undertaken studies which bear on these issues. At the moment, however, we are left with a somewhat ambiguous constellation of results that support, in part, the notion that frustrated needs are particularly conducive to vicarious need-expression on the Rorschach. In particular, the negative findings obtained by Hooker (1958), with homosexuals who were tested outside of clinics or police settings and who were living according to their homosexual style of life, stand in dramatic contrast to the positive results of those investigators who relied upon psychiatric or police facilities for their pools of subjects. But a complete resolution of this issue is complicated by the difficulty of defining, and finding, cases of gratified and frustrated need gratification in a great many domains of motivation. It is hard to con-

ceive, for instance, of universally applicable criteria for a satiated drive-state of dependency among adult members of our society, or any reasonably simple way for finding motivationally gratified and completely conflict-free homosexuals in our articulately and restrictively heterosexual culture.

Another possible explanation of the false negative, the individual who demonstrates a clinically significant behavioral pattern but not the Rorschach content which purportedly reflects that pattern, is that behaviors which appear identical phenotypically may not, in fact, be homogeneous genotypically. To return to Hooker's (1958) research, homosexuality may not be a single entity, and, under that label, individuals may have been grouped who appear similar on some dimension but who are very different in terms of internal processes. This answer may not be fully adequate, however, when one considers that the contents which have been reported to be associated with homosexuality and which differentiate homosexuals from non-homosexuals have been similar from study to study. Moreover, the contents bear a common-sense relationship with deviant sexual behavior and, by and large, fit psychoanalytic formulations about their basic conflicts. It is not that some homosexuals, or assaultive, or anxious individuals give strikingly different content from other, homosexuals and assaultive persons, but that so many in each group fail to develop, or at least to emit that content which shows some correspondence with particular type of behavior.

Thus, the complex issue of the nature and extent of association between need fulfillment in real-life and its reflection in contents brought to bear upon the test stimuli remains complex. We shall sporadically return to this major problem as we will come to consider, in some of the following sections, the structural personality modulators that control and channel need expression, those of defense and style. But before this is done, we must turn to the topic of clashing and incompatible need states.

Conflict

To this point our discussion on bar-

riers to the expression of motive state in the Rorschach has been limited largely to structural characteristics of the blots. It is reasonable to assume that obstacles exist to such expression within the psychological make-up of the respondent, and we now want to examine the theoretical implications of this possibility. The tendency to respond on the Rorschach and countervailing inhibitory tendencies can be formulated as an expression of an approach-avoidance conflict as described by learning theorists (e.g., Miller, 1951) and as incorporated, in modified form, into a recent model of projective test behavior by Epstein (1966). This formulation is based on the consideration of two sets of variables: the demand characteristics of the stimuli, and relative strength of expressive and inhibitory tendencies. According to Epstein, stimuli relatively low in "pull" toward the expression of a drive state are maximally conducive to the externalization of conflictual, drive-related themes. Therefore, in Rorschach terms, one would expect a greater differentiating power between types of persons for responses that reflect a motive state, yet occur to other than their typical and expected blot locations.

Epstein's own research relevant to these formulations has been conducted with thematic stimuli. However, in reference to Rorschach content, Stančák's (1957) results in Czechoslovakia, appear to be congruent with some of Epstein's formulations. This investigator found that neurotics with symptoms in the area of sexuality, e.g. impotence or premature ejaculation, tended to give an excess of sex responses outside the blot areas where this type of content typically appears.³ Although these results are tentative and remain in need of confirmation, they constitute a point of contact between Epstein's theoretical statements and empirical Rorschach findings.

Because hard data are not available, we cannot go beyond this point on the implications of approach-avoidance, or

³ Contrary to Epstein's predictions, however, overrepresentation of sex responses was also observed in their usual and characteristic locations.

inhibition-expression, conflict theory for the analysis of Rorschach content. Certainly, other questions arise out of this version of conflict theory. For example, do both external and internal barriers against the Rorschach expression of motive states result in the same kind of overt content? Answers to such questions await future investigation.

Style

The complexities of need expression on the Rorschach cannot be adequately considered without reference to more general regulating variables in the form of stylistic and defensive mechanisms. To differentiate these two related although distinct concepts, we will consider "style" a general cognitive perceptual device that is characteristic of an individual and that occurs regardless of motivational arousal and of stimulus content. By contrast, defense mechanisms in the present context are conceived as learned and habitual regulatory devices that are invoked under the pressure of a threat or conflict. In metaphoric terms, style may be described as a "general filter" and defense as a "specific filter".

Attention to both kinds of these variables in the field of personality research has been stimulated by such developments as the growth of ego psychology within traditional psychoanalysis, the recent emphasis on competence, exploratory, and other non-viscerogenic drives within the more orthodox learning theories and growth of interest in individual differences in perception. All these trends converge in emphasizing the importance of psychological structure in governing drive expression. As such, the variables of style and defense are potentially of signal importance for reducing the substantial share of random, unassigned error that is characteristic of most Rorschach content studies. On the empirical plane, the role of stylistic and defensive variables has been only infrequently incorporated into the design of actual Rorschach content studies. When this has been done (Kagan & Moss, 1961; Pruitt & Van de Castle, 1962), our insight into the mode of operation of motivational processes has been considerably enriched. In this con-

nection, one may recall the well known experiment by Klein (1954) on the effects of thirst on perceptual activity. In this study, motivation and style so interacted as to produce opposite effects on the performance of two groups of subjects. Two contrasting perceptual styles resulted in the magnification or reduction of need-relevant stimuli, respectively. Similar results may be expected on the Rorschach where such stylistic variables as leveling-sharpening, scanning-focusing (Gardner, Holzman, Klein, Linton & Spence, 1959), and field dependence—field independence (Witkin, Dyk, Faterson, Good-nough & Karp, 1962) may operate to reduce or magnify the manifestation of specific content themes.

Only recently have investigators addressed themselves to the study of specific stylistic operations, as these are manifested in experimental perceptual laboratory tasks in relation to Rorschach variables. Further, whatever work has been conducted along these lines is only tangentially relevant to Rorschach content (Gardner et al., 1959; Shapiro, 1965; Witkin et al., 1962). Nonetheless, three complementary avenues may be proposed toward studying the effect of stylistic variations on Rorschach content. The first of these would make use of correlational and factorial approaches linking Rorschach scores to some of the basic operational measures of the several styles. This would constitute a needed counterpart to the traditional concentration of research effort upon the validation of Rorschach indices against various parameters of real-life behavior. In our judgment the gulf between the experimental and projective approaches to perception will only be bridged when Rorschach scores have been related to laboratory measures as well. Second, features of the Rorschach test performance may in themselves provide clues as to the individual's stylistic mechanisms. Most of the traditional non-content scores have a degree of stylistic relevance and some of these scores, especially those pertinent to location, may be considered as primarily or even exclusively stylistic. Shapiro's (1959; 1965) formulations anticipate and emphasize this

point. The traditional Rorschach ratios of *Auffassungstypus* and *Erlebnisstypus* forshadow recent and contemporary interest in cognitive and perceptual styles. Third, one of the challenges and frustrations of some of the newer extensions of content research is that many of the scores obtained are inextricably intertwined with such stylistic variables as complexity, elaboration, and, to borrow Bruner's (1948) colorful phrase, "perceptual vivification". For example, many, though not all, aggressive, dependent, anxious, or primary process responses are more complex than those that fall outside these scoring categories. Thus, these scores tend to confound two different, and perhaps opposing, variables and may contribute to the increase in the proportion of "false positives". Developmentally-oriented Rorschach researchers (Becker, 1956; Dworetzki, 1939; Friedman, 1953; Hemmendinger, 1953; Lane, 1955; Phillips, Kaden & Waldman, 1959; Siegel, 1953) have demonstrated that integrative and complex Rorschach responses are associated with high levels of psychological development, a personality characteristic that presumably is not conducive to the unbridled and direct manifestation of aggression, dependency, or primary process thinking. Yet it appears that modern Rorschach content scales reflect two facets of perceptual responses: the intensity of a specific or general motive state as well as a stylistic penchant toward organizational and integrative activity in imposing meaning on Rorschach inkblots. The relative weight of these two variables as they enter into content scores remains unknown. Separating the contribution of these two components is a task of high priority if we are to move toward an increased understanding of the relation of perceptual processes to overt behavior.

Defense Mechanisms

Paradoxically, even though the concept of defense mechanism is older and more generally accepted than that of cognitive or perceptual style, less empirical and conceptual work had been done with it. We can register here only a few concerted attempts to operationalize defenses on the Rorschach. Beyond Schafer's

(1954) careful description of indicators of several defenses and Levine and Spivack's (1964) development of a scoring system concerned with repressive manifestations on the Rorschach, only a few isolated attempts have been made toward the use of content clues. Within the domain of actual Rorschach content research, the projects directed by Haan (1964), Kroeber (1963), and Rader (1957) appear to be the most promising. Despite the modest amount of work that has so far been carried out in this area, the hope remains justified that the development of operational measures of defense, both within the Rorschach and outside of it, will serve as an important stepping stone toward augmenting our knowledge of the "screens" and "filters" that are interposed between the experience of a need, or conflict over it, and its manifestation in Rorschach content.

In experimental personality psychology, emphasis upon "perceptual defense" as a universal mode of coping with threatening and ambiguous stimuli has been supplanted by the recognition of a more varied and individualized array of techniques for coping with perceptual threat. Shannon's (1962) work, anticipated by the research of Carlson (1954), Eriksen (1952), and Lazarus, Eriksen, and Fonda (1951), has led to the recognition of two types of response: an enhanced vigilance in the presence of potential objects of threat and a reduction of sensitivity to such stimuli. Going beyond the polarities of sensitization and repression, Kragh (1960) has operationally defined a large number of defenses within the context of what he called "percognitive defensive organization". The results of these studies combine to suggest that defenses are directly reflected in imposing meaning upon ambiguous stimuli and that these mechanisms modify, in a variety of qualitatively different or even contrasting ways, the modalities of expressing needs through perception.

General Motivational Sources of Rorschach Content

So far, our concern has been with the expression of drives on the Rorschach

and with their modulators. We have postponed coming to grips with the second issue raised earlier in this section. That of the motivational mainsprings of the innocuous, affectively neutral content of many Rorschach responses. If, as we have assumed, the inkblots provide the meeting ground between unfulfilled needs and ambiguous structure, how can it be explained that, barring the records of certain acutely psychotic or psychologically emancipated individuals, the typical Rorschach record yields only a fraction of responses that are manifestly aggressive, hostile, sexual, or dependent in content? Two possible, overlapping, answers come to mind. For one, it is plausible to assume that intrinsic mechanisms come into play in integrating objects of imagination and experience with the flexible, yet limiting structural characteristics of the blot. This view is in line with those theoretical statements, which, emanating both from traditional behavior theory (e.g., Berlyne, 1960) and from psychoanalysis, (e.g., Hartmann, 1958) accord a basic role to motives for coping with, and acquiring information about, the external world. In an outspoken and radical view, the Brazilian psychoanalyst, Baer Bahia (1949) has postulated that the confrontation with Rorschach inkblots is a miniature traumatic event, evocative of original object loss, in the psychoanalytic sense of the term. Whether one goes as far as to accept this premise, empirical evidence supports the notion that stimulus ambiguity is productive of tension and anxiety (Linschoten, 1959; Draguns, 1967). Within the Rorschach and outside of it, this burden of intrapsychic stress is reduced by imposing labels on such stimuli, that is, by the individual clarifying for himself the cognitive significance of the perceptually ambiguous blot stimuli. This broad formulation, however, still leaves unresolved the question as to the determinants of the particular contents imposed on the Rorschach inkblots. Plausibly one might argue that those kinds of responses which reflect areas or islands of security and competence are favored for expression in the Rorschach protocol. Thus, a person-

ally insecure but professionally successful physicist, anthropologist, or engineer may report the perception of the tools, techniques, or processes unique to his profession in responding to the Rorschach cards; Bohm (1958) and Höhn (1959) interpret in this light the excessively high occurrence of occupational and technical content in the Rorschach protocol. Similarly, an adult who feels helpless in the face of the demands imposed by his present-day environment may emphasize in his test record themes of childhood and carefree recreation. Combining this proposition on the search for security with those made earlier, the following conclusion is ventured: Rorschach content provides clues to both the person's unfulfilled drives and desires combined with his most successful devices for coping with the world at large. To separate these two components challenges the skill of the sensitive test interpreter; research literature provides few, if any, clues for segregating these two sources of Rorschach content variance.

Symbolization

At best, the considerations advanced so far provide only part of an answer to the question as to why affectively neutral contents predominate in most Rorschach protocols. For further understanding as to why this should be we must turn to another source of explanation, the concepts and formulations of traditional psychodynamic and, in particular, psychoanalytic theory. In addition to providing cognitive mastery over an amorphous and multifaceted representation of the environment, the Rorschach response can also reasonably be construed as an indirect and camouflaged code of the person's basic and unconscious preoccupations. This view is fundamental to the intensive, psychodynamic exploitation of Rorschach content. Several authors (Höhn, 1959; Lagache, 1957; Palm, 1956; Schafer, 1954) have commented upon the similarities and differences between the Rorschach response and the dream. In varying ways, all these theorists stress the greater degree of ego's participation and direction in the course of responding to the inkblots as compared with representations in dreams.

Nevertheless, it is generally agreed that considerable room for symbolization remains within the limits imposed by cognitive-perceptual activity in the context of Rorschach performance.

Empirical work in this area, as reviewed by us (Haley et al., 1967), has been concerned with two basic problems: operationally defining symbolic motive expression within Rorschach content and tracing the symbol, by means of a variety of special techniques, to its fundamental motivational referent. Beyond these objectives, other and more specific issues arise: (1) What are the personality and behavioral similarities and differences among subjects who express their need states in symbolic and disguised form and those who rely upon direct and unbridled expressions of the same motivational states? (2) What is the empirical relationship between the symbolic and the direct representation of a wish, and (3) What is the significance for personality and behavior of variations in this relationship? Presumably experiments designed to answer these questions would shed light not only on the operation of symbolization on the Rorschach, but would enrich our understanding of symbolizing activity generally.

On a more general plane of discourse, individual differences in the ability to symbolize remain to be considered. It appears likely that there are individuals who are incapable of transforming a drive state into symbolic expression and, thus, fail to give that content which reflects drives but is drained through overt action. If one assumes that symbolic expression is maturationally higher than action (Piaget, 1951; Werner, 1948; Phillips & Zigler, 1961), it follows that subject groups of a relatively high developmental level would be more likely to produce content that symbolically reflects their motives and drives. Gilberti and Gregorietti's (1954) results pertaining to differences in the relationship between symbolic and direct sex responses in relation to subject's psychodiagnostic states appear to be consonant with this formulation.

In elaboration of the same point, one may refer to the "alternative channels

model" (Broverman, Jordan & Phillips, 1960) which postulates that inability to express needs in real-life situations impels individuals toward seeking alternate modes of need expression, one of which is fantasy, couched in direct or symbolically disguised form. This model concurs with psychoanalytic theorizing that views thought and fantasy as consequences of delayed action (Rapaport, 1951), and with the results of developmentally oriented research (Krus, Werner & Wapner, 1953). Perhaps these formulations constitute one additional explanation of the false positive, and of Smith's and Coleman's (1956) finding of a curvilinear relationship between aggressive content on the Rorschach and aggressive behavior in the classroom.

We have now reviewed what we see as issues in understanding the personal and subjective determinants of Rorschach percepts. Just as stimulus characteristics of the blot exercise constraints upon the content produced, so, too, do the structural and motivational components of the individual's personality facilitate or place limits on the contents which emerge in the course of the Rorschach procedure. We want now to turn to a consideration of the third and last influence on Rorschach percepts to which this paper is devoted, the interpersonal relationship between the examiner and the subject.

Communication: Interpersonal Factors

Rorschach investigators and users have lagged in according explicit recognition to the influence of interpersonal factors upon Rorschach performance. The unspoken, if tempting, assumption that the competent and sensitive examiner can reduce the distorting effects of his behavior and presence to the vanishing point has been exploded by an imposing accumulation of empirical results that Zax, Stricker and Weiss (1960), Masling (1960), and ourselves (Draguns et al., 1967) have reviewed. Moreover, Fulkerson's (1965) theoretical model of projective test behavior, based on decision theory, inextricably links the choices that the subject makes to the situation in

which he finds himself. In the light of these findings and formulations, it is the nature and extent of interpersonal effect upon Rorschach performance which remain to be pinpointed; its presence has been adequately demonstrated.

We want to turn now to the specific topics to which this section is devoted: the absolute extent of distortion of content clues as a function of interpersonal influences. We will do so under four headings. For one, the question as to the examiner's influence may be raised in relation to the superficial vs. self-revealing character of the responses produced. Second, the effects of explicit and experimentally manipulated, or inadvertent and uncontrolled, reinforcement of particular varieties of content needs to be discussed. Third, we shall address ourselves to the problem of the subjective definitions of the test situation that the subject brings with him to the session. Finally, we will deal with the more global theme of deliberate modifiability of content.

Direct Examiner Influences

Beginning with the classical study by Lord (1950), a considerable amount of information has been amassed as to the effects of examiner's behavior upon the content, as well as other variables, of the Rorschach protocol produced.

It has been noted that a cold, impersonal air on the part of the examiner favors the production of a bland impersonal record weighted down with an excess of Animal and Popular percepts, always the most common responses encountered. It has been observed also that covert hostility in the part of the examiner facilitates the emergence of hostile content. As yet, it is difficult to tie these observations together with others reported in earlier sections of this review, and put together a general statement of principles that relates the examiner's behavior to the subject's self-censorship of his responses. It would appear, however, that both the overt behaviors and the implied attitudes of the examiner influence the content elicited. Further, these influences appear to affect the various content categories differentially. The Rorschach

protocol, then, may be viewed as a perceptual record of the meeting of two personalities: that of the examiner and the subject. What portion of this product is traceable to conscious withholding by the respondent, and to what extent unconscious mechanisms come into play, has not been ascertained either phenomenologically or experimentally.

Selective Elicitations of Content Categories

It is clear that influences akin to verbal variants of operant conditioning come into play to affect the presence and frequency of particular content categories. Greenspoon's (1955) experiment on the verbal reinforcement of grammatical forms is directly paralleled by a number of studies concerned with similar manipulations of Rorschach content categories. In the experimental literature, these reinforcement techniques have been deliberately and systematically imposed; it is possible that other such influences operated, unknown to both examiner and the examinee, as a result of verbal habits and interpretational predilections. Masling (1965) recently demonstrated an enhanced incidence of content categories as direct result of indoctrination with purported and fictitious interpretive significance of particular content categories. Outside the area of Rorschach research, Rosenthal (1963) has been concerned recently with the empirical study of the social psychology of the psychological experiment. His results suggest that, to a surprising degree, experimenters, cognizant of their hypotheses and desirous of obtaining positive results, influence the behavior of experimental subjects by techniques presumably operating outside the limits of their own awareness. When this finding is conjoined with those reported in the Rorschach literature, it is easy to conclude that response content is quite malleable under the impact of examiner influence.

As a group, Rorschach researchers have been much less concerned with the "double blind" experimental method than investigators in psychopharmacology. In fact, we have found few studies in the literature that provide in-

formation as to the knowledge by the experimenters of the results anticipated. The sensitivity of Rorschach content frequencies to the subtle influences of verbal reinforcement carries with it the implication that the use of the "double blind" method in this domain of research would be entirely salutary.

Subjective Definitions of Test Situation

It is also to be remembered that the subject comes to the test session with his own preconceptions and misconceptions, and that these mould his subjective definition of the test situation: its requirements, opportunities, threats, and dangers. It is relatively easy for the examiner to manipulate the effects of the test session, and several investigators have done so. The results of these studies, reviewed by us (Draguns et al., 1967), suggest that defining the test as a measure of intelligence versus one of imagination, or inculcating a permissive in contrast to a failure-oriented atmosphere, produces differential effects upon content. What most investigators have overlooked, however, is that an even greater variety of subjective sets come into play under the standard conditions of Rorschach presentation and instruction. We have to go back to the early study by Luchins (1947) to find an attempt to incorporate the subjects' diverse expectations into a research design. Luchins' research was not directly concerned with content characteristics, so that the effect of these expectations upon content variables remains one of the gaps in the fund of information that we possess on Rorschach content.

What is known is that situational influences, in the form of general inhibition of facilitation of responses to the test, the selective reinforcement of particular responses, and subjective definitions of the nature of the examination all play a role in the type of protocol produced. Experimentally, Rorschach investigators have concentrated their efforts upon manipulating the variables controlled by the examiner; they have not gone as far as the students of the paper-and-pencil personality tests in determining the range

within which the subject himself may voluntarily control the production of content. As a consequence, we do not know, for example, to what extent a test record, including its content, would vary if a subject took the test with the explicit set of producing the best possible performance, or one of revealing his personality as little as possible. We anticipate that there is an unchanging "core" of test responses that would remain despite such variations in test instructions, but at this point we are not in a position to say how much of test performance it would encompass.

Modifiability of Rorschach content

Related to, yet transcending, the issues considered in the preceding sections, there is the more general problem of Rorschach content's susceptibility to conscious modification. Two points of view on this issue are represented in the Rorschach literature.

On the one hand, there are authorities from Rorschach (1942) himself to Piotrowski (1957) who minimize the contribution of content to the picture of subject's personality. Expressing this point of view, Kadinsky (1956) referred to Rorschach content as that aspect of the test performance which is subject to the greater degree of conscious censorship. Germane to this attitude also are the statements of Frenkel-Brunswick (1951) who, without specifically referring to the Rorschach, advocated a personality-centered research program on the formal aspects of perceptual performance, for this in her view was least influenced by conscious or unconscious controls.

On the other side of this issue, are all these proponents of the intensive utilization of content (Brown, 1953; Bruckner, 1957; Lubar, 1948; Phillips & Smith, 1953; Schafer, 1954; Zubin, 1954; Zubin, Eron & Schumer, 1965) who regard content clues as highly significant and direct reflections of personality dynamics. Implicitly, at the core of the controversy, appear to be divergent views as to the deliberate and volitional modifiability of response content. The argument can in part be empirically resolved

by using content and more structural perceptual clues separately as bases for interpretive statements, and by checking the results obtained by these two operations against external and objective criteria. There is only a small number of studies (Bower, Testin & Roberts, 1960; Sen, 1950; Zubin, Eron & Sultan, 1956) that are addressed to this issue; their results point to the superiority of content indices over formal scores as sources of valid externally verified inferences about subjects' personalities.

Conclusions

In the course of this survey, we have arrived at a position midway between Rorschach's (1942) devaluation of content as a source of meaningful interpretive information and Frank's (1939) view of content as a unique and invaluable catalogue of a person's dominant wishes and drives. A direct, one-to-one correspondence between content variables and subjects' real-life characteristics has not been demonstrated and it is idle to hope that this state of affairs will be solely traced to the methodological imperfection of a great many, though not all, of the studies reviewed. Rather, we hold that the whole notion of a simple correspondence between perception and behavior runs counter to the entire accretion of experimental and theoretical literature that links perception, cognition, and personality.

To restate, the psychological sources of attributed meaning appear to lie first of all, in two kinds of unfulfilled drive states: those related to dominant motives that are prepotent in the person's life and those associated with the task of "making sense" of the blot configuration for its own sake. The operation of these two factors, one intrinsic and the other extrinsic to the task at hand, roughly corresponds to the basic adaptive tasks of fulfilling internal needs and coping with external reality. The expression of these behavioral tendencies is screened, modified, and obscured by structural, personality, and situational characteristics. It has been our contention that these types of mediators have been only in-

completely incorporated into most of the existing research. Because they have been allowed to vary haphazardly, these three kinds of attributes may well have contributed a major share to the existing error variance in Rorschach content research.

The collective research enterprise in the area under review has focused too narrowly upon the identification of diagnostic and dynamic personality characteristics, to the neglect or exclusion of these other, equally significant, parameters. The incorporation of all these characteristics of the Rorschach test procedure into the future research is a task of uncommon complexity. It will not be completely solved even with the availability of modern multidimensional statistical designs. Yet, undertaking it remains an urgent objective for two reasons: to reduce the aura of inconclusiveness that still hovers over the results of much of Rorschach content research and to bridge, empirically, the gap that continues to separate this area of investigation from other domains of related and pertinent perceptual and cognitive research.

In connection with the last point, it is well known that Rorschach practice and research have developed in an atmosphere of stark empiricism. This atheoretical orientation has led to a luxurious if somewhat chaotic growth. In quantity, Rorschach research is abundant; its quality is all too often marred by a disregard for pertinent theoretical formulations and empirical findings that have evolved from the experimental study of interacting personality, perceptual, and cognitive variables. In the light of this theoretical and laboratory work, the assumptions upon which the use of the Rorschach test rests appear plausible and sound. The study of response to the Rorschach inkblots is only a special case of this field of investigation. It is our hope that a fusion of these two spheres of research will be achieved and that the present series of papers constitute a step toward that goal.

REFERENCES

- Alcock, T. *The Rorschach in practice*. Philadelphia: Lippincott, 1963.

- Allport, F. H. *Theories of perception and the concept of structure*. New York: Wiley, 1955.
- Attneave, F. Some informational aspects of visual perception. *Psychological Review*, 1954, 61, 181-193.
- Baer Bahia, A. *El test de Rorschach desde el punto de vista psicoanalítico*. Buenos Aires: El Ateneo, 1949.
- Bakan, P. & Brown, R. A. On the attention-demand value of Rorschach stimuli. *Journal of Projective Techniques & Personality Assessment*, 1967, 31, (3), 3-6.
- Bartley, S. H. *Principles of perception*. New York: Harper, 1958.
- Becker, W. C. A genetic approach to the interpretation and evaluation of the process-reactive distinction in schizophrenia. *Journal of Abnormal & Social Psychology*, 1956, 53, 229-236.
- Berlyne, D. E. *Conflict, arousal and curiosity*. New York: McGraw-Hill, 1960.
- Bijou, S. W. & Kenny, D. T. The ambiguity of TAT cards. *Journal of Consulting Psychology*, 1951, 15, 203-209.
- Bohm, E. *A textbook in Rorschach test diagnosis*. New York: Grune & Stratton, 1958.
- Bower, P. A., Testin, R., & Roberts, A. Rorschach diagnosis by a systematic combining of content, thought process, and determinant scales. *Genetic Psychology Monographs*, 1960, 62, 105-183.
- Broverman, D. M., Jordan, E. J. & Phillips, L. Achievement motivation in fantasy and behavior. *Journal of Abnormal & Social Psychology*, 1960, 60, 374-387.
- Brown, F. An exploratory study of dynamic factors in the content of the Rorschach protocol. *Journal of Projective Techniques*, 1953, 17, 251-279.
- Brown, W. P. Conceptions of perceptual defence. *British Journal of Psychology Monographs Supplement*, 1961, All of #35.
- Brückner, P. *Inhaltsdeutung und Verlaufsanalyse im Rorschach-Verfahren*. Cologne: Nova-Verlag, 1957.
- Bruner, J. S. Perceptual theory and the Rorschach test. *Journal of Personality*, 1948, 17, 157-168.
- Bruner, J. S. On perceptual readiness. *Psychological Review*, 1957, 64, 123-152.
- Canestrari, R. Il funzionalismo nella percezione. *Rivista di Psicologia*, 1955, 49, 63-95.
- Carlson, V. R. Individual differences in recall of work-association test words. *Journal of Personality*, 1954, 23, 77-87.
- Dalla Volta, A. Contributi allo studio della percezione con particolare riferimento alla psicologia differenziale: La percezione delle forme a significato indefinito. *Arch. Psicol. Neurol. Psichiat.*, 1946, 7, 21-64.
- DeRenzi, E. Studio comparativo fra riflesso psicogalvanico (effetto Tharchanoff) e Test di Rorschach. *G. Psichiat. Neuropat.*, 1956, 84, 29-54.
- DeVos, G. A quantitative approach to effective symbolism in Rorschach responses. *Journal of Projective Techniques*, 1952, 16, 133-150.
- Draguns, J. G. Affective meaning of reduced stimulus input: A study by means of the semantic differential. *Canadian Journal of Psychology*, 1967, 21, 231-241.
- Draguns, J. G., Haley, E. Marie & Phillips, L. Studies of Rorschach content: A review of the research literature. Part I: Traditional content categories. *Journal of Projective Techniques & Personality Assessment*, 1967, 31, (1), 3-32.
- Dworetzki, Gertrude. Le test De Rorschach et l'évolution de la perception. *Archives of Psychology*, 1939, 27, 233-396.
- Edmonston, W. E. & Griffith, R. M. Rorschach content and ink blot structure. *Journal of Projective Techniques*, 1958, 22, 394-397.
- Elizur, A. Content analysis of the Rorschach with regard to anxiety and hostility. *Rorschach Research Exchange and Journal of Projective Techniques*, 1949, 13, 247-287.
- Epstein, S. Some theoretical considerations on the nature of ambiguity and the use of stimulus dimensions in projective techniques. *Journal of Consulting Psychology*, 1966, 30, 183-192.
- Eriksen, C. W. Defense against ego threat in memory and perception. *Journal of Abnormal & Social Psychology*, 1952, 47, 230-235.
- Finney, B. C. Rorschach test correlates of assaultive behavior. *Journal of Projective Techniques*, 1955, 19, 6-16.
- Flavell, J. G., & Draguns, J. G. A microgenetic approach to perception and thought. *Psychological Bulletin*, 1957, 54, 197-217.
- Frank, L. K. Projective methods for the study of personality. *Journal of Psychology*, 1939, 8, 389-413.
- Frenkel-Brunswick, Else. Personality theory and perception. In R. R. Blake & G. V. Ramsey (Eds.) *Perception: An approach to personality*. New York: Ronald Press, 1951, 356-419.
- Friedman, H. Perceptual regression in schizophrenia. An hypothesis suggested by the use of the Rorschach test. *Journal of Projective Techniques*, 1953, 17, 171-185.
- Fulkerson, S. Some implications of the new cognitive theory for projective tests. *Journal of Consulting Psychology*, 1965, 29, 191-197.
- Gardner, R. W., Holzman, P. S., Klein, G. S., Linton, Harriet & Spence, D. P. Cognitive control: A study of individual consistencies in cognitive behavior. *Psychological Issues*, 1959, Whole #4.
- Gibson, J. J. The useful dimensions of sensitivity. *American Psychologist*, 1963, 18, 1-15.
- Gibson, J. J. *The senses considered as perceptual systems*. Boston: Houghton-Mifflin, 1966.
- Goldiamond, I. Perception. In A. Bachrach (Ed.) *Experimental foundations of clinical psychology*. New York: Basic Books, 1962, 280-340.
- Gilberti, F., & Gregoret, L. Contributo alla conoscenza dei contenuti e dei simboli sessuali nel Rorschach in psichiatria. *Sistema Nervoso*, 1954, 6, 396-407.

- Greenspoon, J. The reinforcing effect of two spoken sounds on the frequency of two responses. *American Journal of Psychology*, 1955, 68, 409-416.
- Groffmann, K. J. Empirische Grundlagen und diagnostische Theorie der Aufforderungscharaktere im Rorschach-Test. *Rorschachiana*, 1963, 8, 121-139.
- Guillaumin, J., & Guyotat, J. Réponses anatomiques au Rorschach chez les chirurgicaux. *Rev. Psychol. appl.*, 1961, 11, 31-52.
- Haan, Norma. An investigation of the relationship of Rorschach scores, patterns, and behaviors to coping and defense mechanisms. *Journal of Projective Techniques & Personality Assessment*, 1964, 28, 429-441.
- Haley, E. Marie, Draguns, J. G. & Phillips, L. Studies of Rorschach content; A review of research literature. Part II: Non-traditional uses of content indicators. *Journal of Projective Techniques & Personality Assessment*, 1967, 31, (2), 3-38.
- Hallowell, A. I. The Rorschach technique in personality and culture studies. In B. Klopfer (Ed.), *Developments in the Rorschach technique*. Vol. II: *Fields of application*. Yonkers-on-the-Hudson: World Book Company, 1956, 458-544.
- Hartmann, H. *Ego psychology and the problem of adaptation*. New York: International Universities Press, 1958.
- Hemmendinger, L. Perceptual organization and development as reflected in the structure of the Rorschach test responses. *Journal of Projective Techniques*, 1953, 17, 162-170.
- Höhn, Elfriede. Theoretische Grundlagen der Inhaltsanalyse projektiver Tests. *Psychol. Forsch.*, 1959, 26, 13-74.
- Hooker, Evelyn. Male homosexuality in the Rorschach. *Journal of Projective Techniques*, 1958, 22, 33-54.
- Kadinsky, D. Schichtstruktur im Rorschach. *Rorschachiana*, 1956, 5, 3-19.
- Kagan, J. & Moss, H. A. The availability of conflictual ideas: A neglected parameter in projective test response. *Journal of Personality*, 1961, 29, 217-234.
- Kenny, D. T. Stimulus functions in projective techniques. In: B. A. Maher (Ed.) *Progress in experimental personality research*. Vol. 1, New York: Academic Press. 1964, pp. 285-354.
- Klein, G. S. Need and regulation. In: M. R. Jones (Ed.) *Nebraska symposium on motivation*. Vol. II. Lincoln: University of Nebraska Press, 1954, 224-274.
- Kragh, U. Pre-cognitive defensive organization: review, discussion and preliminary operational definitions. *Acta psychiat. neurol. Scand.*, 1960, 35, 190-206.
- Kroeber, T. C. The coping functions of the ego mechanisms. In R. W. White (Ed.), *The study of lives*. New York: Atherton Press, 1963, 178-199.
- Krus, D., Werner, H. & Wapner, S. Studies in vicariousness: Motor activity and perceived movement. *American Journal of Psychology*, 1953, 66, 603-608.
- Kunkel, E. Der Rorschach-Test bei tatauffälligen "Alkoholikern." *Psychologie und Praxis*, 1963, 7, 35, 43.
- Lagache, D. La rêverie imageante: Conduite adaptative au test de Rorschach. *Bull. Group. Franc. Rorschach*, 1957, 9, 3-11.
- Lane, J. E. Social effectiveness and developmental level. *Journal of Personality*, 1955, 23, 274-284.
- Lazarus, R. S. A substitutive-defensive conception of apperceptive fantasy. In: Kagan, J. & Lesser, G. S. (Eds.) *Contemporary issues in Thematic apperceptive methods*. Springfield: Thomas, 1961, 51-71.
- Lazarus, R. S., Eriksen, C. W. & Fonda, C. P. Personality dynamics and auditory perceptual recognition. *Journal of Personality*, 1951, 19, 471-482.
- Levine, M. & Spivack, G. *The Rorschach index of repressive style*. Springfield, Illinois: Thomas, 1964.
- Lindner, R. L. Some significant Rorschach responses. *Journal of Criminal Psychopathology*, 1944, 5, 775-778.
- Lindner, R. L. Content analysis in Rorschach work. *Rorschach Research Exchange*, 1946, 10, 121-129.
- Lindzey, G. *Projective techniques and crosscultural research*. New York: Appleton-Century-Crafts, 1961.
- Linschoten, J. Aktualgenese und heuristisches Prinzip. *Z. exp. angew. Psychol.*, 1959, 6, 449-473.
- Little, K. B. Connotations of the Rorschach inkblots. *Journal of Personality*, 1959, 27, 397-406.
- Lord, Edith. Experimentally induced variations in Rorschach performance. *Psychological Monographs*, 1950, 64, No. 316.
- Lubar, G. H. Rorschach content analysis. *Journal of Clinical Psychology*, 1948, 9, 146-152.
- Luchins, A. S. Situational and attitudinal influences on Rorschach responses. *American Journal of Psychiatry*, 1947, 103, 780-784.
- Masling, J. The influence of situational and interpersonal variables in projective testing. *Psychological Bulletin*, 1960, 57, 65-85.
- Masling, J. Differential indoctrination of examiners and Rorschach responses. *Journal of Consulting Psychology*, 1965, 29, 198-201.
- Mérei, F. *Der Aufforderungscharakter der Rorschach-Tafeln*. Innsbruck: Neiger, 1953 (As cited by Groffmann, 1963).
- Metzger, W. *Gesetze des Sehens*. Frankfurt: Kramer, 1953.
- Miller, N. Comments on theoretical models, illustrated by the development of a theory of conflict behavior. *Journal of Personality*, 1951, 20, 82-100.
- Monod, Mireille. Le symbolisme des planches et leur succession dans l'interprétation du Rorschach. *Bull. Psychol.*, 1963, 17, 155-157.
- Murstein, B. I. The projection of hostility on the Rorschach and as result of ego-threat. *Journal of Projective Techniques*, 1956, 20, 418-428.

- Murstein, B. I. The relationship of stimulus ambiguity on the TAT to the productivity of themes. *Journal of Consulting Psychology*, 1958, 22, 348.
- Murstein, B. I. The measurement of ambiguity in thematic cards. *Journal of Projective Techniques*, 1960, 24, 419-423.
- Murstein, B. I. *Theory and research in projective techniques (Emphasizing the TAT)*. New York: Wiley, 1963.
- Nikelly, A. G. Hypothesis theory and perceptual responses to inkblots. *Journal of Projective Techniques*, 1961, 25, 75-80.
- Osgood, C. E., Tannenbaum, P. H. & Suci, G. J. *The measurement of meaning*. Urbana: University of Illinois Press, 1957.
- Palm, Rose. Comparative study of symbol formation in Rorschach test and dream. *Psychoanalytic Review*, 1956, 43, 246-251.
- Péchoux, R. De la spécificité de chaque planche du Rorschach. *Bull. Group. Franc. Rorschach*, 1959, 11, 21-32.
- Phillips, L., Kaden, S. & Waldman, M. Rorschach indices of developmental level. *Journal of Genetic Psychology*, 1959, 94, 267-285.
- Phillips, L., & Smith, J. G. *Rorschach interpretation: Advanced technique*. New York: Grune & Stratton, 1953.
- Phillips, L. & Zigler, E. Social competence: The action-thought parameter and vicariousness in normal and pathological behaviors. *Journal of Abnormal & Social Psychology*, 1961, 63, 137-146.
- Piaget, J. Principal factors in determining evolution from childhood to adult life. In D. Rapaport (Ed.), *Organization and pathology of thought*. New York: Columbia University Press, 1951, 154-175.
- Piotrowski, Z. A. *Perceptanalysis*. New York: Macmillan, 1957.
- Pruitt, W. A., & Van de Castle, R. L. Dependency measures and welfare chronicity. *Journal of Consulting Psychology*, 1962, 26, 559-560.
- Rabin, A. I. A contribution to the "meaning" of Rorschach inkblots via the semantic differential. *Journal of Consulting Psychology*, 1959, 23, 368-372.
- Rader, G. E. The prediction of overt aggressive verbal behavior from Rorschach content. *Journal of Projective Techniques*, 1957, 21, 294-306.
- Rapaport, D. Toward a theory of thinking. In D. Rapaport (Ed.), *Organization and pathology of thought*. New York: Columbia University Press, 1951, 689-730.
- Rorschach, H. *Psychodiagnostics*. New York: Grune & Stratton, 1942.
- Rosenthal, R. On the social psychology of the psychological experiment. *American Scientist*, 1963, 51, 268-283.
- Saugstad, P. Effect of food deprivation on perception-cognition. *Psychological Bulletin*, 1966, 65, 80-90.
- Schafer, R. *Psychoanalytic interpretation in Rorschach testing: Theory and application*. New York: Grune & Stratton, 1954.
- Sen, A. A statistical study of the Rorschach test. *British Journal of Psychology, Stat. Sec.*, 1950, 3, 21-39.
- Shannon, D. T. Clinical patterns of defense as revealed in visual recognition thresholds. *Journal of Abnormal & Social Psychology*, 1962, 64, 370-377.
- Shapiro, D. The integration of determinants and content in Rorschach interpretation. *Journal of Projective Techniques*, 1959, 23, 365-373.
- Shapiro, D. *Neurotic styles*. New York: Basic Books, 1965.
- Siegel, E. L. Genetic parallels of perceptual structuring in paranoid schizophrenia: An analysis by means of the Rorschach techniques. *Journal of Projective Techniques*, 1953, 17, 151-161.
- Smith, J. R., and Coleman, J. C. The relationship between manifestations of hostility in projective tests and overt behavior. *Journal of Projective Techniques*, 1956, 20, 326-334.
- Stancák, A. Rorschachovo vyšetrenie pri tzv. sexuálnych neurozách. *Bratislavské Lekárske Listy*, 1957, 37, 551-558.
- Swets, J. S., Tanner, W. P. & Birdsall, T. G. Decision processes in perception. *Psychological Review*, 1961, 68, 301-340.
- Vernon, M. D. The functions of schemata in perceiving. *Psychological Review*, 1955, 62, 180-192.
- Weiss, A. A., Winnik, H. Z. A contribution to the meaning of anatomy responses on the Rorschach test. *Israel Annals of Psychiatric & Related Disciplines*, 1963, 1, 265-276.
- Werner, H. *Comparative psychology of mental development*. Chicago: Follets, 1948.
- Witkin, H. A., Dyk, R. B., Faterson, H. F., Goodenough, D. R. & Karp, S. A. *Psychological differentiation*. New York: Wiley, 1962.
- Zax, M. & Loiselle, R. H. Stimulus value of the Rorschach inkblots as measured by the Semantic Differential. *Journal of Clinical Psychology*, 1960, 16, 160-163.
- Zax, M., Stricker, G., & Weiss, J. H. Effects of non-personality factors on Rorschach performance. *Journal of Projective Techniques*, 1960, 24, 33-93.
- Zubin, J. Failures of the Rorschach technique. *Journal of Projective Techniques*, 1954, 18, 303-315.
- Zubin, J., Eron, L. D. & Schumer, Florence. *An experimental approach to projective techniques*. New York: Wiley, 1965.
- Zubin, J., Eron, L. & Sultan, Florence. A psychometric evaluation of the Rorschach experiment. *American Journal of Orthopsychiatry*, 1956, 26, 773-782.

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The Significance of Varieties of Actors of Rorschach Human Movement Responses

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Summary: The *M* responses of college students and hospitalized schizophrenics were dichotomized into Actors and Actions. Five types of actors, complex response trends, adjustment levels, and interactions were discriminated. Ratings of feeling tone were not very reliable, with associations to *M* rated both more negatively and reliably than Actions. A single factor of comfort-discomfort was elicited. Unacceptable attitudes were partly expressed through other-sex figures. Elaboration of the Actor beyond a simple figure tends to be associated with discomfort. Students and schizophrenics projected accepting attitudes toward different actor-types. *M*-content was related to development and therapeutic transference.

Introduction

The purpose of this paper is to refine the interpretation of *M*-content. It will be demonstrated that *M* is a complex variable insofar as there are discriminable types of projected figures (Actors), many different attitudes potentially elicitable from a single response, different levels of response-potential, and complex interactions. In practice, of course, "content analysis alone, without structural formal analysis, threatens to deteriorate into wild guessing" (Piotrowski, 1958).

There are a number of definitions of the meaning of *M*-content. Rorschach himself gave two. He believed that the *M* disclosed unconscious motives because, like night dreams, they were a product of repression. "Kinesthesias (*M*) stabilize the motility as well as the affectivity . . . The *M* type's (subjects with many *M*) . . . reaction (to the inkblots) resembles that in dream states" (Rorschach, 1942.) Later Rorschach added that extensor (as-

sertive) *M* disclose a struggle against oneself and the world, probably against both, in the subject's own fantasies and not at the level of overt social motor activity (Schneider, 1959). On the other hand, flexor or compliant *M* were said to reveal a resigned attitude toward one's introverted tendencies; this, Rorschach (1942) described as "accepting one's destiny" (Oberholzer's case in the appendix to the *Psychodiagnostics*).

Nearly all other authors' explanations of the meaning of *M* are paraphrases of Rorschach's views. The formulation by Beck, Beck, Levitt & Molish (1961, p. 72) is succinct: The *M* "really reproduces movements or activities that the subject is carrying on within his mental life; since these are mental activities in which we should like to engage in the outer world but cannot, or dare not, they are our wish fulfilling activities."

The opposite stand, i.e., that the *M* reveal action tendencies which are not repressed but actually influence the subject's handling of others in personally vital matters, was taken by Piotrowski (1936). He proposed a theory (1950) in which it was stated that: "The *M* always reveal the subject's conception of his role-in-life. The subject may or may not be, fully or partially, aware of his conception of role . . . The 'role in life' denotes a definite tendency, deeply embedded in

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the subject and not easily modified, to assume an unchanging attitude or attitudes when dealing with others in matters recognized by the individual as vitally important to him. The *M* also designates a tendency to form a more or less definite conception of reality and a dislike for acting in a manner not foreseen in, or incompatible with, that conception." Piotrowski specified that: (1) *M* represents a potentially expressive action-tendency (in contrast to a fantasy); and, (2), that the overt manifestation of the *M* depends upon the type of "actors" appearing in it. For example, the closer the similarity between the perceived figure and the perceiver, e.g., same vs. opposite sex, the more likely the behavior is to be overtly expressed.

There are some recent extensive studies of *M*-content. Piotrowski and Rock (1963) report that certain *M* signs differentiate successful from unsuccessful executives (part of a more comprehensive "Percept-analytic Executive Scale"). They used an extremely detailed Inquiry, e.g., the purpose or reason for the movement, frustration of the activity, and minor qualifications by the responder. The positive signs were: Postures of confident strength; motor skill at games or on stage; positive social involvement; co-operation for a common purpose. The negative signs were: Bending toward a fixed object; giving in to gravity by lying, hanging, etc., and frustrated movement.

Parker (1959, 1963) studied college students' and schizophrenics' attitudes toward, and description of, their own *M*. The posture, age, sex, and race, relative to the perceiver, did not predict the *S*'s identification with *M* or his actual sexual gender. A majority of both groups perceived vague or dissimilar figures (particularly the students). It was hypothesized that the sex of *M* represents in part that sex to which the most vital relationships are formed. *S*s described their *M* in diverse ways: Action or potential; daydream; most people; particular person; seen in real life; read about or movie; wish; fear; or unidentifiable. *M* was evaluated as being dissimilar in several respects to unconscious fantasies.

In a subsequent report (Parker, 1965), it was demonstrated that about half of *M* reflected subjective attitudes indicating expressive trends. It was possible to differentiate the "Actor" from the "Action," although with increasing subjective closeness the *S*s found both less acceptable. Concerning *S*s who identified with their *M*, Students rated the Activity Acceptable, and the Schizophrenics rated it Unacceptable; the reverse trend was obtained in *S*s who did not identify with *M*. This was interpreted as reflecting the Schizophrenics' less efficient defenses and great alienation. Subjective feeling of expression of *M*-attitudes was not associated with any formal feature of the response, indicating that the meaning of *M* is complex and not easily determined from the usual indicators.

Fisher's (1967) review of Parker's studies stated that "the findings bear testimony that one cannot find out much . . . by asking the kinds of questions cited . . . for it was surprisingly difficult to detect real differences between normals and schizophrenics." The writer's position is that *M* is dynamically a self-portrait experienced by the *S* as part of his potential or actual behavior. It reflects the variability of experience. Some *S*s experience similarity to their *M*, much as a dreamer can often identify with his dream regardless of multiple distortions. Since schizophrenics and non-schizophrenics both obey the laws of human relationships, it is more parsimonious to conclude that the groups have unexpected similarities. Similarities in intelligence-test patterns between comparable groups have been demonstrated (Parker & Davidson, 1963).

Some *S*s identify with their *M*, while others externalize its meaning (perceive it as being unrelated or external in an impersonal way). There are a number of perceptual mechanisms which may account for this: We hypothesize response styles analogous to that found on psychometric tests (Messick, 1962); perceptual recognition threshold differences between externalizers and others (Lewit, Brayer, & Leiman, 1962; Shannon, 1962); balance between sensitiza-

tion and inhibition as a primary perceptual defense (Lewit et al., 1963); the influence of reward and punishment upon figure-ground differentiation (Solley & Long, 1960). *M*-avoidance or displacement (Parker, 1963) may be related to reduction of threat through feedback circuits. As the ego's scanning function develops, it becomes more refined, which allows it to exercise selectivity, and thus to delay or suppress perceptual responses (Chodorkoff & Chodorkoff, 1958).

Method

Hypotheses

- (a) Different types of *M* can be discriminated according to the type of Actor alone.
- (b) Unfavorable attitudes are projected into opposite-sex figures.
- (c) Different information is elicited from the *M*-Action (Movement) than from the *S*'s Associations derived from the Action.
- (d) *M* is a complex variable in that it reflects discriminable aspects of behavior in the areas of self-acceptance, anxiety, and self-image.
- (e) When *M* is appraised in different ways, there is evidence of a common factor of comfort-discomfort.

Subjects

Two contrasting groups of *Ss* were utilized to test the generality of the findings. Although the same *Ss* were utilized in other studies (Parker, 1959, 1963, 1965), none of these findings have been previously reported.

The Student population. This group of subjects consisted of 30 male students in the Introductory Psychology Course at University College, New York University. Included were two Freshmen, 12 Sophomores, 12 Juniors and four Seniors. The mean age was 19.3 years; 27 *Ss* were between 17 to 20 years of age, with three *Ss* in the group between 21-35. They had some introduction to the Rorschach technique, particularly with reference to the scoring, but were naive as to the nature of the experiment, and the interpretation of *M*. All were born

in the United States, with the exception of one *S* who arrived here at the age of three years. Three students could not be utilized because they did not perceive *M*.

The Patient population. The Patient population consists of 60 *Ss*, 30 males and 30 females at the Manhattan State Hospital, Ward's Island, New York City. While it was planned to confine the study to high school graduates, all born in New York City, the extreme heterogeneity of the population of patients rendered this impractical. Each subject met all of the following criteria: 1. Diagnosed schizophrenic; 2. Belonging to the white race; 3. 50 years of age or less, reducing the possibility of senile and pre-senile cerebral disorders; 4. High school graduates, or if not, at least eight years of schooling and an equivalent I.Q. of 100 or more on the Vocabulary subtest of the Wechsler Adult Intelligence Scale, individually administered; 5. No history of brain injury or any form of psychosurgery; 6. No history of a diagnosis of alcoholism or psychopathic personality; 7. Born in the United States; 8. No evidence of confusion, deterioration, or withdrawal (based upon the Rorschach and the examiner's clinical judgment) sufficient to render the subject incapable of either understanding the procedure or cooperating adequately.

Selection and testing of subject involved ten months and screening at least 3,600 records, more than the daily population of Manhattan State Hospital. It was observed that to obtain one patient-record that seemed superficially to meet the criteria, it was necessary to screen an average of 15 cases. For each four patients thus selected, only one was usable, for a number of reasons: 1. Did not perceive Human Movement; 2. Too confused to be a reliable source of information; 3. Refusal to cooperate; 4. Records were inaccurate, or that the patient did not meet the criteria; 5. Vocabulary I.Q. below 100 in the case of non-high school graduates.

Thus, 60 records had to be scanned, and four patients examined before one usable protocol was obtained. Multiplied by 60 subjects finally accepted, it means

Table 1
Response - trends to Questions by Actor - Type

Q	Item	Schizophrenics (60)						College (30)					
		a	b	c	d	e/f	Sum	a	b	c	d	e/f	Sum
4.	Feel About Act?	1	1	1	1	1	5	1	1	0	0	-1	1
5.	Like to do?	0	0	0	0	1	1	0	0	0	-1	-1	-2
6.	Feel About Person?	1	1	1	-1	1	3	0	1	1	1	0	3
7.	Like to be?	0	0	0	-1	0	-1	0	0	1	-1	-1	-1
10.	Alike M?	-1	-1	-1	-1	-1	-5	-1	-1	-1	-1	0	-4
11.	Similarity?	0	-1	-1	-1	0	-3	-1	0	0	-1	-1	-3
16.	Possible to do?	1	1	1	0	1	4	1	1	1	1	0	4
17.	Anxiety with activity?	-1	-1	-1	1	-1	-4	0	0	1	0	1	+2
18.	Thought about?	0	0	-1	1	0	0	0	0	1	0	0	1
20.	Performed Act?	0	-1	0	0	0	-1	0	0	1	0	0	+1
21.	Like Discussing?	1	1	1	0	0	3	1	1	1	1	0	4
	Sum	+2	0	0	-1	+2		+1	+3	+6	-1	-3	
	S - C	+1	-3	-6	0	+5							
	S + C	+3	+3	+6	-2	-1							

that approximately 3,600 records were scanned, and approximately 240 patients interviewed or given a complete Rorschach.

The testing sessions were essentially of two different kinds. A small percentage of the Ss were examined as part of a routine clinical examination. In these cases, the *M*-questionnaire and associations were integrated with the whole session, and introduced as part of the procedure. The remaining Ss were examined for the purposes of this research.

The largest single diagnostic entity was the paranoids (See Table 1), 26 in number, which with 11 catatonics, constituted the majority of the cases. A smaller number of patients were diagnosed hebephrenic (3), schizo-affective (7), mixed (9), undifferentiated (1), and pseudoneurotic (3). Mean age: 31.4; SD 7.5; range, 17-50; median years of education: 12; mean WAIS Vocabulary I.Q. (Wechsler, 1955), of those Ss who were not high school graduates: 120; mean length of hospitalization: males 3.0, females 1.5. Since previous analysis of the Questionnaire data *Q* scores indicated no significant sex-differences (Parker, 1963, 1965) the two sexes were combined for the Schizophrenic group.

Data of this study

The Rorschach and Inquiry were given in the usual way to the patients; only Plates I, II, III, IV, and VII to the Students. If no *M* were perceived, the *S* did not become part of the study. Any scorable *M* was utilized. Where two or more were perceived, one was selected through Edwards' (1950) table of random numbers. Then, the complete *M*-Questionnaire was administered (Parker, 1959, pp. 166-168).

The basic data were the *S*'s productions (*M*, self-ratings to selected items from the *M*-Questionnaire, further associations to these questions, and description of the *M* according to categories). Each *M* (initial response plus inquiry) was subdivided into two parts: Actors and Actions. The Actors were categorized into six types. The following five scores were analyzed according to actor-types: Judges utilizing the Response

Affect Scale rated (1) Actions and (2) Associations; judges utilizing the Social Effect Scale rated (3) Actions and (4) Associations; and (5) sum of self-ratings (*Q* score) derived from the *M*-Questionnaire.

Analysis of M. All *M* (Initial Response Plus Inquiry) were divided into two parts: The Actor: type of figure, sex, clothing, race, qualifying adjectives, etc. The Action: description of the movement or activity. Only a numeral represented the Actor.

Analysis of Representative Responses:

S Actors Actions (*in italics*)

1. Two girls
(2) *Dancing together, touching each other with their posteriors. Looking at each other over their shoulders, facing away.*
12. Devils or fallen angels,
eye, horns, snout,
demonic figures
(2) *Rising from the ground, ascending.*
38. Dancers, male
(2) *Arching their backs in a dance pose, dance movement like a ballet.*

Varieties of Human Movement Actors.

The Actors were ordered into categories by two judges rating independently. In case of disagreement, R. S. Parker cast the deciding vote.

- (a) Embellished: Attributed personality characteristics, or particular roles, adding something to the usual "popular" quality, or unusual, potentially "real" persons.
- (b) Performers: Costume, acrobats, dancers, disguised, etc.
- (c) Simple Figures: "Men," "women," "figures," "people."
- (d) Undeveloped, Primitive Cultures: Natives, cannibals, children.
- (e) De-humanized: Man-made, animal-like, damaged, fictitious.
- (f) Unreal: Science-Fiction, weird, evil, threatening, in general the "(H)" quality.

(e) and (f) were combined to obtain a more reliable *N*.

Associations to M. At the time that the Ss responded to the questions concerning their M they were encouraged to add anything they wished in their own words. The Associations to questions #4, 5, 6, 7, & 8 (See Question Scale) were selected for evaluation because they were relatively rich in content. The judges received the Question and Association only, except for those few cases where references to the Actor or Action became part of the Association.

Examples ensue:

Quest.	S	Association
4	90	There's a good chance that what they are talking about is unfavorable.
5	87	When I first described this as a man washing in a bowl I didn't discern these sexual symbols which I think are present.
6	85	I've always wanted to travel, and I wouldn't mind meeting someone like this.
7	89	I have reservations about being a clown.
8	83	I'd feel pretty ridiculous, dancing around a fire, nude.

Question scale. The experimenters selected 11 questions answered by the Ss concerning their M from Parker's original study (1959). The original bipolar alternatives scaled from 2-6 were transformed to a scale ranging from 1 (comfortable) to 4 (uncomfortable). Where there were only two alternatives, they were scaled as 2 & 3. The Question-score was the sum of the 11 transformed scores obtained from the Ss' responses concerning their M.

4. How do you feel about what he (she, they) is (are) doing?
5. Is this something that you would like to do?
6. How would you feel about such a person as you saw in the ink blot, if you were to meet somebody like that?
7. How would you like to be a person like this?
8. If you can imagine doing what this person is doing, how would you feel

if you were to do it? Tell it in your own words. (This qualitative, verbal response, was utilized in Associations but not in the Question-score.)

10. Whom does this remind you of? (Scored according to degree of identification.)
11. How much are you like what you saw on the ink blot?
16. If you forget about whether it is a good or bad thing to do, would it be possible for you to do what you have seen on the ink blot?
17. If you were to do what this person (or persons) did, would you feel nervous or guilty?
18. Have you ever thought about doing what is being done on the ink blot?
20. Have you ever done this?
21. How do you feel about talking to the psychologist about this?

The subjective evaluation by the Ss of their M. A 5 x 4 contingency table was devised with the five Actor-types on one axis and four combined self-descriptions of the M-response on the other. The self-description categories were: (a) Behavioral Trend (16 Ss — have done; seriously considered doing); (b) Affective, Personal (15 — daydream; wish; fear); (c) Externalized, Personal (33 — most people; something I have seen); (d) Externalized, Impersonal (26 — read about; movies; none; other). Association between Actor-type and self-evaluation of the M was tested by Chi Square.

Interactions between actor-types, different aspects of the M (Question Scale), and level of adjustment (Schizophrenic vs. College student). The response tendency for the subjects who projected a particular actor-type was determined for each question. Schizophrenics and college students were evaluated separately (See Tables 1 & 2). The responses to the scale for each question were dichotomized as positive or negative (affect or degree of identification). Then the responses for all Ss projecting a particular actor-type were cumulated for each question considered separately and expressed as a fraction. To minimize the effect of different numbers of Ss in each actor-type,

each cell was given equal weight. Where the ratio was 2:1 or greater, a score of +1 was assigned; where 1:2 or less, there was a score of -1; cells with less than three cases, or intermediate ratios, were assigned zero. For example: There were ten Schizophrenic Ss who perceived Type 1 Actors (Embellished). The ratio of positive:negative responses to Question 4 was 7:3; therefore, the cell Schizophrenic - Type A - Question 4 received a value of 1. The data of Table 1 were then subjected to a three-way analysis of variance (See Table 2).

of the response or the actual perceiver.

1. Unqualified Pleasure
2. Qualified Pleasure
3. Emotional Neutrality (also, insufficient data)
4. Qualified Displeasure
5. Emotional Pain

(c) Judges and their reliability:

The nine clinical psychologist raters comprised four staff members with the Ph.D. degree, three post-doctoral trainees or trainees who had received their Ph.D. recently, and two advanced train-

Table 2
Analysis of Variance of Self - Rating Trends
(Actor - Types, Levels, Questions)

Component	df	MS	F
Within Groups (SS: 56.65)			
Questions	10	2.92	42.68 ***
Adj. Level x Q	10	0.56	8.23 **
Actor - Type x Q	40	0.31	4.59 **
Between Groups (SS: 5.97)			
Adj. Level	1	.03	0.4
Actor - Types	4	.55	8.1 **
Adj. Level x A - Type	4	.98	13.7 **
Residual (2.72)			
Q x adj. x A - type	40	.068	
** p .01			
*** p .001			

Rating scale. The Actions and Associations were rated separately on two generally similar 5-point scales. The following comprises an abstract of the judges' instructions and definitions of scale-points:

- (a) Role Affect Scale: You are to estimate the affective tone the respondent would experience if he were to express the behavioral trend (role, desires, fantasies, etc.) represented in the response.
- (b) Social Effect Scale. Your rating should be the likely effect upon the object of the behavior, regardless of what is experienced by the "Actor"

ees. They were randomly assigned numbers 1-9 and then divided into sets of three. No gross discrepancy in training level was found between sets. Each of the three subject groups of 30 Ss was subdivided into three sets of ten Ss.

Each set of judges rated 10 Ss from each group. Each group of 30 Ss had 10 ratings contributed from each set of judges. The raters, functioning independently were given typed Actions of 30 different Ss from the three groups, and rated them on the Response Affect Scale. Then they rated the Associations from the same Ss on the RA Scale, ignoring their own ratings of Actions. When this was com-

pleted, they were given the Actions and Associations of 30 different Ss from the three groups. They followed the same procedure with the Social Effect Scale.

The judges made unitary ratings of the Ss' Associations to the five Questions. Where there was little information, or no response (about half the cases), the rater was instructed to give a midpoint rating (3).

The reliability of Scale ratings of a particular level was estimated in two ways by intra-class correlation, *R* (Haggard, 1958). One unit was based upon each set of 10 Ss rated by three judges. Since there were three groups, two levels, two rating scales, and three sets/group, a total of 36 intra-class *R*s were computed. The other type of unit was the data for a given level (Action or Association), rated by a particular Scale (*RA* or *SE*), for a total of four, cumulated over all 90 Ss.

R is an estimate of the mean inter-correlation between the judges with the difference of level of rating between judges removed. Since *R* is closely related to the analysis of variance, reliability will be significant when the *F*-ratio of Between

Ss: Within Ss variance is significant. Its limits are similar to Pearson Product-Moment correlation, with limitation upon high negative *R*s.

Results

Reliability

The most important finding is the generally low reliability of even a set of three judges in rating relatively simple material (in contrast to global ratings of the psychodiagnostic examination). Individual sets of judges varied in reliability from $-.04$ to $+.95$. The cumulative *R*s for the four combinations of 2 Levels and 2 Scales were all significant at the .01 level and ranged from $+.31$ to $+.55$. By inspection, there was a low correlation between a judge-set's *R* for one unit and the remainder of its ratings. It was concluded that the group ratings were sufficiently reliable for research purposes, but consistent with many other findings, these ratings could not be performed reliably by most individual judges. The highest reliability was obtained by the Role Affect Scale for Associations.

Table 3
Mean ratings by actor types

Actor type	Judges' ratings*					Self-Ratings (Q)
	Response Affect		Social Effect		Mean	
	Actions	Assoc.	Actions	Assoc.		
(a) Embellished (14)	2.92	3.21	2.95	2.69	2.94	26.50
(b) Performers (15)	2.42	2.38	2.35	2.44	2.40	25.86
(c) Simple (35)	2.49	2.65	2.49	2.64	2.57	25.93
(d) Undeveloped (12)	2.69	3.47	2.58	2.92	2.92	28.75
(e/f) Unreal/Dehuman (14)	2.98	3.02	2.66	2.57	2.81	26.35
Mean	2.65	2.82	2.59	2.64		26.53
S.D.	1.21	1.20	1.17	1.62		3.59
Intraclass R	+.46	+.55	+.31	+.34		
P of R	.01	.01	.01	.01		

* *F* - test for differences among Actor - types were significant at the .005 level for R.A. Associations, at the .05 level for combined Response Affect scores, not significant for the combined Social Effect scores, and at the .001 level for the mean of all scores. *Q* score mean differences for actors was significant at the .05 level; *t* - test of difference between ratings of Actions and Associations was significant at the .05 level.

Table 4
Unembellished Figures Analyzed by Relative Sex

Sum of Self-Ratings (Q-Scale) ^a	Same Sex (12)	Indecisive Sex (5)	Opposite Sex (18)	F
	23.17	25.60	28.27	12.61***
Ratings by Judges ^b				
R.A. Scale				
Actions	2.55	2.46	2.53	0.00
Associations	2.06	2.86	2.98	4.19*
S.E. Scale				
Actions	2.45	2.13	2.66	0.71
Associations	2.39	2.40	2.87	1.75
Mean Judges' Ratings	2.36	2.46	2.76	3.32*
^a 2 df between; 32 df within				
^b 2 df between; 137 df within				
*P < .05				
***P < .001				

Validity

We take as a test of validity of the judges' ratings the degree of agreement between the cumulative self-ratings of the Ss on the Question-Scale and the sum of the four judges' ratings per subject. The Pearson Product-Moment correlation was +.76. The degree of agreement of ranked affect estimated by Spearman Rank-Difference correlation was +.9 (significant at .05). The ranked affect of each Actor-type (See Table 3), with judge-rating first (Actors and Associations) and self-rating second (sum of self-ratings to questions), was as follows: Embellished (5-4); Performer (1-1); Simple (2-2); Undeveloped (4-5); Unreal/Dehumanized (3-3). It is concluded that the judges' ratings of various aspects of the response have much in common with Ss' direct evaluation of their *M* in the areas of acceptance, anxiety, and identification. The higher validity than reliability coefficients (*R*) may be due to the fact that there are more degrees of freedom in the combined *Q* scores and total ratings than in the scores analyzed by *R*.

Hypothesis (a): Different Actor-types can be discriminated

Conclusion: Confirmed

Data: The mean expressed feeling of comfort by the Ss (See Table 2) differs significantly between Actor-types within each Adjustment level (.001), but not between Adjustment Levels (College vs. Schizophrenics). The interactions of Actor-types with Questions (.01) and Adjustment Level (.01) were significant. Favorable feelings were associated with Embellished figures (a) in both groups and unfavorable ones with Undeveloped / Primitive figures (d) (See Table 1). The Schizophrenics who perceived Dehumanized/Unreal figures (e/f) expressed favorable responses to many questions, with an opposite trend by the College students. The College students warmly embraced the Simple figures (c), which were neutral to the Schizophrenics (summed over all questions).

A significant difference between Actor-types (See Table 3) was obtained for the sum of all judges' ratings (.001), which was weighted most heavily by the most reliable data, for ratings of Associations

by Response Affect Scale (.001). Less reliable, though still significant differences between Actor-types was obtained by the *Q* score, representing the *Ss'* direct evaluation of their relationship to their *M*.

Hypothesis (b): Unfavorable attitudes are projected into opposite-sex figures.

Conclusion: Confirmed

Data: For this analysis, the Simple figures (c) alone were considered. Table 4 reveals significantly (.001) increased negative feeling-tone with increasing perceived sex differences between *S* and his *M*. Mean judges' ratings of feelings of Actions and Associations also discriminated relative sex of the Simple figure (.05) probably most heavily weighted by rating of Associations by *RA* Scale.

Hypothesis (c): Different information is elicited from Action than from Association.

Conclusion: Some supporting evidence.

Data: Mean scores were .17 more scale points in the uncomfortable direction for Associations than Actions (See Table 3) on the *RA* Scale (.05). Associations were scored more reliably (See Table 3) and had a higher correlation with *Ss'* self-ratings (See Table 5). Considered alone, only Associations discriminated between Actor-types (See Table 3). Associations seemed to have a higher loading on the general factor of comfort-discomfort (See Table 5).

Hypothesis (d): *M* content is a complex variable.

Conclusion: Confirmed.

Data: Significant differences exist (.001, See Table 2) in the response trends to different Questions. Question score interacts at the .01 level with both Adjustment Level and Actor-type. Both groups tend to feel dissimilar to their own responses (See Table 1, Questions 10, 11), but would find it possible to perform the activity (Q-16).

Taken over all Actor-types, the schizophrenic ambivalence becomes clear. Compared to the college students, they are more likely to accept the activity (Q-4), or like to do it (Q-5), but would feel guilty if they were to perform it

(Q-17). Chi Square for subjective self-evaluation five Actor-types x four self-ratings categories, was 27.05, significant at the .02 level with 12 *df*. The largest contributor to Chi Square was the cell Externalized, Impersonal (self-rating of *M*-meaning) x Underdeveloped, Primitive (Actor), in which eight cases were found but only 3.5 expected.

Hypothesis (e): A single common factor of comfort-discomfort accounts for the relationships among the Scales.

Conclusion: Confirmed.

Data: The following correlations were obtained—*RA* and *SE* Scales, +.72; Sum of Action ratings (two levels) and Question score, +.45; Sum of Association-ratings (two levels) and *Q* score, +.76; and, Sum of all four ratings/subject and Questions, +.76. The Between *Ss* variance for the *RA* and *SE* Scales were significant at the .001 and .005 levels. All the intercorrelations of judges' ratings are positive (See Table 5), with the *SE* Scale ratings of Associations having the highest correlations with all other ratings.

Discussion

These findings have important implications from the viewpoints of both conduct of the examination and interpretation of the data.

In conducting the examination a more detailed inquiry is useful, than one merely directed at scoring *M*. The feeling tone of Associations is more unpleasant than of Actions (perhaps consistent with the theory of repression). In addition, discriminations between groups has been obtained from queries in the areas of acceptance of the activity (Q-4 & Q-5), anxiety (Q-17), and actual performance of analogous activities (Q-20). Different response-trends occur in connection with different aspects of *M* according to the actor-type as well (See Table 1).

Concerning interpretation of *M*, the data suggests that the individual examiner ought to be very cautious in drawing conclusions for the following reasons: First, evaluations of such data as feeling-

Table 5
Inter - Correlations

Variable	R.A. - Action	R.A. - Assoc.	S.E. - Action	Ques.
R.A. - Associations	+33			
S.E. - Actions	+20	+40		
S.E. - Associations	+40	+68	+50	+81
Questions	+31	+77	+60	

r of R.A. Total Score x S.E. Total Score = +.72

r of Questions x Sum of all for ratings = +.76

Note: all correlations reliable at the .01 level

tone seem to be rather unreliable. Secondly, because of the complexity of the data, the use of single interpretive principles would lead to either error or degradation of the data. M varies along many parameters: Actor-types, alone and in interaction with response-trends (Questions) and Adjustment Level of subject, and level of response. It is necessary to extend the previous conclusion that differences in M attitudes between college students and schizophrenics occurred largely in the triple contingency response of identification, acceptability, and adjustment level (Parker, 1965).

Some findings have positive interpretive implications. First, Piotrowski's hypothesis (1957) concerning the projection of unacceptable attitudes into figures of the opposite sex was confirmed. This is contrary to the previously reported findings of Parker (1965) concerning the overall lack of difference between the sexes. By analyzing M -actors into different types, this sex difference was obtained in the Simple Actors.

Secondly, "Popular," or Simple Actors, instead of lacking interpretive significance, especially when they were of the same sex as the subjects, reflected strong acceptance in the college students. Simple figures appeared similar to Embellished and Performing figures insofar as they tended to elicit positive or neutral feelings in both groups. Primitive/Undeveloped figures were associated with negative feelings. The only difference of affective direction was elicited by Unreal

/Dehumanized figures, which were associated with positive feelings in the schizophrenics and negative ones in the college students. This is an extension of the previous findings concerning which figures these S s identify with (Parker, 1965).

Thirdly, in contrast to Simple figures, Embellished figures may refer to attitudes of emotional pain, rather than creative, productive feelings, though group differences do exist. It is not surprising when there is a relatively high mean level of discomfort associated with Undeveloped and Unreal/Dehumanized figures, but it was not predicted that potentially highly guarded, disguised, unacceptable attitudes were represented by Embellished figures.

Finally, the fact that a group of schizophrenics perceived Dehumanized, Unreal Actors in a favorable light illustrates the fact that not all schizophrenic fantasies, including distorted ones, are pathologically anxiety-ridden.

One aim of these studies was to check on the theory of M proposed by Piotrowski (1936, 1950). The capacity to correctly identify the S 's preferred role in life, and the comfort he experiences in acting in accord with it, has been increased by demonstrating that meaningful types of M can be discriminated. M , which represents in part the S 's worldview, originates in the distant past. Through M one may look with differing degrees of clarity into the child's world. An important problem is the child's per-

ceptions of parental figures and resultant identifications. It is very difficult for a little child to identify with a parent (say, mother) who is so domineering that a boy (or girl) would be crushed if he treated mother as inconsiderately, or tyrannically as she treats him. A submissive, quiet, gentle mother can be "identified" with. Two doves can agree admirably, but two hawks can hardly live without many fights. A child is no match for a powerful parent who does not mind using his physical and mental superiority. It is for this reason that one may state that *M* develops through "living with mother (or) father," avoiding the ambiguity of the concept of "identification."

Finally, interpretation of *M* may be utilized to predict and understand the course of a patient in psychotherapy (Parker, 1967). We refer to the nature of the *S*'s transference, or retention of his childhood expectations, affects, and neurotic manipulations. Thus, *M* may represent a nexus between contemporary attitudes and the stresses and attitudes of childhood.

REFERENCES

- Beck, S. J., Beck, Anne G., Levitt, E. E., & Molish, H. B. *Rorschach's test. Vol. I. Basic processes.* (3rd ed.). New York: Grune & Stratton, 1961.
- Chodorkoff, B. & Chodorkoff, J. Perceptual defense: An integration with other research findings. *Journal of General Psychology*, 1958, 58, 75-80.
- Edwards, A. L. *Experimental design in psychological research.* New York: Rinehart & Co., 1950.
- Fisher, S. Projective Methodologies. *Annual Review of Psychology*, 1967, 18, 165-190.
- Haggard, E. A. *Intraclass correlation and the analysis of variance.* New York: The Dryden Press, 1958.
- Lewitt, D. W., Brayer, A. R., & Leiman, A. H. Externalization in perceptual defense. *Journal of Abnormal and Social Psychology*, 1962, 65, 6-13.
- Messick, S. Personality Structure. *Annual Review of Psychology*, 1962, 13, 93-129.
- Parker, R. S. An investigation of the content of the Rorschach Human Movement Response utilizing the subjects' associations to their own *M*. Unpublished Doctoral Dissertation, New York U., 1959. Available from University Microfilms, Ann Arbor, Mich.
- Parker, R. S. The perceiver's identification of the figure in the Rorschach Human Movement Response. *Journal of Projective Techniques*, 1963, 27, 214-219.
- Parker, R. S. The acceptability and expression of attitudes associated to the Rorschach Human Movement response. *Journal of Projective Techniques & Personality Assessment*, 1965, 29, 83-92.
- Parker, R. S. The varieties of resistance in group psychotherapy considered from the view point of adaptation. *Psychiatric Quarterly*, 1967, 41, 511-535.
- Parker, R. S., & Davidson, N. L. A comparison of students of nursing and hospitalized patients on scores derived from an intelligence test (WA-IS). *Psychiatric Quarterly Supplement*, 1963, 37, II, 298-306.
- Piotrowski, Z. A. The *M*, *FM*, and *m* responses as indicators of changes in personality. *Rorschach Research Exchange*, 1936, 7, 148-156.
- Piotrowski, Z. A. A Rorschach Compendium In, Brussel, J. A., Hitch, K. S., & Piotrowski, Z. A., *A Rorschach Training Manual*. Utica, N.Y.: State Hospitals Press, 1950.
- Piotrowski, Z. A. *Perceptual analysis*, 2nd print. Philadelphia: author, 1965.
- Piotrowski, Z. A. Freud's psychoanalysis and Rorschach's perceptual analysis. *American Journal of Orthopsychiatry*, 1958, 28, 36-41.
- Piotrowski, Z. A., & Rock, M. R. *The perceptual-analytic executive scale: A tool for the selection of top managers.* New York: Grune & Stratton, 1963.
- Rorschach, H. *Psychodiagnostics.* New York, Grune & Stratton, 1942.
- Schneider, E. Eine Diagnostische Untersuchung Rorschachs auf Grund der Helldunkeldeutungen Ergänzt. *Zentralblatt für die Neurologie und Psychiatrie*, 1959, 159, 1-10 (contains a blind analysis by Rorschach).
- Shannon, D. T. Clinical patterns of defense as revealed in visual recognition thresholds. *Journal of Abnormal and Social Psychology*, 1962, 64, 370-377.
- Solley, C. M., & Long, J. Affect, fantasy, and figure-ground organization. *Journal of General Psychology*, 1960, 62, 75-82.
- Wechsler, D., *Manual for the Wechsler Adult Intelligence Scale*, New York: The Psychological Corp., 1955.
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Induction of Body Image Boundary Changes in Male Subjects¹

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Summary: An attempt was made to induce body boundary changes in males. Holtzman blots were administered on a test-retest basis to three groups: 16 directing attention to their skin and muscles; 15 focusing upon the body interior; and 15 not focusing upon the body. Changes in Barrier score in all three groups were in the directions predicted from previous study of females. Males who concentrated upon exterior body areas did not show the same significant increase in Barrier score seen in females. But males who concentrated upon their body interiors displayed a significant decrease in Barrier not observed among females. Results reaffirm the possibility of manipulating body attitudes via body attention exercises.

It has become apparent from a number of sources (Fisher and Cleveland, 1958; Schilder, 1935; Wapner, Werner & Comalli, 1958) that persons differ with regard to the ways in which they experience their boundaries. Some perceive their boundaries as well defined, clearly separating them from their environs; others are less certain about their body boundaries and feel only hazily separated from what is "out there."

Fisher and Cleveland (1958) developed an index (Barrier score) to measure body boundary definiteness. It is based upon the number of responses to an inkblot series in which special protective, containing, or decorative functions are assigned to the periphery of the percept. Some examples of Barrier responses are: rocky canyon, turtle with a shell, embroidered coat, vase. Repeated studies have demonstrated that the Barrier index may be scored with objectivity and that it has adequate test-retest reliability.

The work of Des Lauriers (1962) suggests that certain procedures strengthen the body boundaries of schizophrenic children. Also, Reitman and Cleveland (1964) have described clear body boundary alterations as the

result of sensory isolation. The possibility of systematically altering the boundary by means of experimental procedures has been proposed by Fisher and Renik (1966). They hypothesized that focusing an individual's attention on the outside of his body would increase his boundary definiteness, and that focusing his attention upon the interior of his body would decrease boundary definiteness. This hypothesis was based on the idea that exterior body site sensations (notably from skin and muscles) play a more prominent part in the formation of body boundaries than do interior body sensations (e.g., from stomach, heart, liver).

In an earlier study Fisher and Renik (1966) sought to test their hypothesis by evaluating female subjects who were divided into three groups and shown inkblots both before and after the performance of certain tasks. In one sample the experimental tasks involved the subject concentrating her attention upon the exterior of her body (exterior condition). As predicted, this group showed a definite rise in Barrier score when retested after performance of the exterior focusing tasks. A second group directed its attention in a similar manner to the body interior (interior condition). This group showed a decrease in Barrier score, but not significantly different from the third group of control subjects. The control group performed tasks unrelated

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to body awareness and showed negligible change in Barrier score.

The present study sought to apply to male subjects the boundary altering procedures used by Fisher and Renik (1966) with females. The experimental goal was to reproduce the previous results, but with special attention to any differences between the sexes in their responses to the same techniques for inducing body image boundary changes.

Procedure

In all respects, save that the subjects were male, the experimental procedure was identical with that described in detail by Fisher and Renik in the previous study (1966). Each subject was shown a series of 25 Holtzman blots (Form B) and a baseline or initial Barrier score was obtained. One group then directed their attention to the interiors of their bodies: e.g., they were asked to report spontaneous sensations originating in their stomachs, hearts, lungs, and other internal organs; they reported what it felt like to swallow a mouthful of water, and distinguished between cold and room temperature water as it entered the stomach. A second group concentrated upon their body exteriors: e.g., they reported any spontaneous sensations originating in the skin and muscles of their bodies; they differentiated between various grades of sandpaper and between bristles of varying stiffness by applying them lightly to the skin on the backs of their hands; and imagined how certain external states would feel. The control group was not asked to alter body attention patterns in any way: e.g., Ss reported their familiarity with a series of pictures which were unrelated to the body; they named various towns and cities they could remember having visited; and they sorted a series of designs into like and dislike categories. The procedures used required a total of fifteen minutes in each group. Parallel tasks for each of the three groups were carefully designed to be as similar as possible with regard to the type and depth of tester-subject interaction involved. Two-thirds of the way through the exercises or tasks the

S was shown cards 1-12 of the Holtzman blots (Form A) and at the end of tasks the remaining cards (13-25) were administered. The score derived from this total of 25 blots could then be compared with the initial Barrier score. All Holtzman protocols were scored blindly without any knowledge as to whether they were derived from first or second testings.

Subjects

Ss were all men who were recruited by payment of a fee. There were 16, 15, and 15 in the exterior, interior, and control groups respectively. The corresponding median ages in the groups were 21, 20, and 20; and the mean educational levels 16, 15, and 15 years.

Results

Mean initial Barrier scores in the control, exterior and interior groups were 4.6, 4.2, and 5.2 respectively. None of these means differed significantly from the others.

As indicated in Table 1, the interior group showed a predicted test-retest decrease in Barrier. This difference was significantly different from the small increase in Barrier produced by the exterior condition ($p < .02$, one-tail test) and from that in the control group ($p < .01$, one-tail test). Ss in the exterior group showed a test-retest increase in Barrier score, although the mean value of +0.69 was not significantly different from the small test-retest increment shown by the control group. Product-moment correlations were obtained for test-retest Barrier scores within each group. The results were $r = .02$, $r = .51$, $r = .87$ for exterior, interior, and control groups respectively.

The opportunity was taken to combine the data from the male subjects used in this study with those previously obtained by Fisher and Renik (1966) from female Ss. Differences in change in Barrier scores among the three test conditions are shown in Table 2. Significant differences occurred between the exterior and interior condition ($p < .001$, one-tail test) and between the interior condition and

Table 1
Means and Standard Deviations for Test-Retest Barrier Scores
in the Exterior, Interior, and Control Groups of Male Ss
and Significance of Differences

Groups	Initial Barrier		Retest Barrier		Difference
	M	σ	M	σ	
Interior ($N = 15$)	5.20	2.21	3.40	2.19	-1.8*
Exterior ($N = 16$)	4.20	1.86	4.89	3.36	+ .69*
Control ($N = 15$)	4.60	2.22	4.87	1.99	+ .27*

* t for Interior vs. Exterior = 2.04 ($p < .02$, one-tail test)

* t for Interior vs. Control = 2.60 ($p < .01$, one-tail test)

* t for Exterior vs. Control = .40 (Not significant)

Table 2
Significance of Differences for Change in Barrier Score
in Exterior, Interior and Control Groups,
Male and Female Ss Combined

Groups	N	t	p
Exterior vs. Interior	70	2.82	$< .001$
Interior vs. Control	68	2.00	$< .01$
Exterior vs. Control	63	1.14	N.S.

the control group ($p < .01$, one-tail test). That is, the exterior condition produced an increase in Barrier which exceeded the change during the interior condition, but not greater than that resulting from the control condition. The interior condition produced a decrease in Barrier significantly different from the change associated with control condition. Overall, then, the exterior and interior conditions were significantly differentiated, and this was also true of the interior versus control conditions. Two of the

three results were significantly congruent with theoretical expectation.

Discussion

The changes in Barrier score shown by male Ss who were asked to focus their attention upon exterior or interior body sites were in the same direction as predicted by Fisher and Renik (1966) and demonstrated previously in female Ss: attention to the boundary aspects of the body tended to increase Barrier score and attention to interior body sites tended to

decrease Barrier score. However, it is interesting that among female Ss the largest change observed was produced by focusing attention on exterior body sites, while the largest change among male subjects occurred when attention was focused on interior body sites.

The fact that male Ss who concentrated on exterior body sites did not show as striking a rise in Barrier score as female subjects might be attributed to the fact that men are generally less practiced than women in the alteration of the body surface. The feminine habit of adorning and decorating the skin for cosmetic purposes may indicate a facility in using exterior body sites in a boundary strengthening manner. Actually, there are data suggesting the possibility that when men do find a meaningful way to ornament their skins, this is associated with increased body boundary definiteness. Thus, a study of tattooed prisoners (Mosher, Oliver, & Dolgan, 1967) showed them to have significantly higher Barrier scores than prisoners without tattoos. One can view such findings as indicating that the presence of tattoos served to make the experience of the skin more vivid. Of course, the possibility also exists that more high Barrier than low Barrier individuals originally chose to be tattooed.

The male Ss, in contrast to the females, showed their greatest change (viz., a decline in Barrier) during the interior condition. Perhaps this is a function of the fact that men have relatively less familiarity than women with interior body functions (which often have "raw" and threatening connotations in our culture) and therefore would be made more anxious by having their attention directed to them. The relatively greater familiarity of women with the body interior probably develops as the result of repeated menstrual experiences and the need to prepare for a childbearing role. One may speculate that for many women the inside of the body is partially equated with the womb which in turn signifies a container with creative functions—rather than something with negative implications.

It should be noted that correlations of the test-retest Barrier scores within each group showed again in male Ss, as was previously true for female Ss, the highest test-retest values during the control condition, and the lowest test-retest values during the exterior condition.

The experimental results as a whole, aside from pointing out an interesting sex difference in the dynamics of body boundary change, give direct evidence that the Barrier score is a function of body experiences related to the differentiation of the exterior versus interior sectors of the body. Such evidence is more straightforward and significant in its demonstration of the exterior-interior body differentiation linked with the Barrier score than previous attempts based upon showing that the Barrier score is correlated with patterns of exterior-interior body symptoms and exterior-interior physiological reactivity. The findings also reaffirm the general feasibility of altering body perception by means of experimental procedures.

REFERENCES

- Des Lauriers, A. M. *The experience of reality in childhood schizophrenia*. New York: International Universities Press, 1962.
- Fisher, S., & Cleveland, S. E. *Body image and personality*. Princeton: Van Nostrand, 1958.
- Fisher, S., & Renik, O. Induction of body image boundary changes. *Journal of Projective Techniques & Personality Assessment*, 1966, 30, 429-434.
- Mosher, D. L., Oliver, W. A., & Dolgan, J. Body image in tattooed prisoners. *Journal of Clinical Psychology*, 1967, 23, 31-32.
- Reitman, E. E., & Cleveland, S. E. Changes in body image following sensory deprivation in schizophrenic and control groups. *Journal of Abnormal and Social Psychology*, 1964, 68, 168-176.
- Schilder, P. *The image and appearance of the human body*. London: Kegan Paul, Trench, Trubner, 1935.
- Wapner, S., Werner, H., & Comalli, P. E., Jr. Effect of enhancement of head boundary on head size and shape. *Perceptual and Motor Skills*, 1958, 8, 319-325.

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Left-Handedness: A Study of Its Relation to Opposition

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Summary: An attempt was made to evaluate the relationship between left-handedness and oppositional tendencies through the use of the White Space (S) response on the Rorschach. Right and left-handed males were administered the Rorschach, and it was found that the left-handed subjects gave significantly more S responses than did the right-handed males. It was felt that the results of this study indicated the existence of a relationship between hand-preference and oppositional tendency. Caution was raised concerning the assumption that oppositional tendencies foster left-handedness. It was pointed out that opposition could also be produced by being left-handed.

"Handedness" is a phenomenon unique to man and consequently has intrigued him since earliest times. According to the present state of knowledge, it would seem that handedness may be considered both as a reflection of an evolutionary tendency in the human race as well as a developmental process in the individual towards increasing differentiation in motor functions and refinements in motor skills. Right-handedness, in our society, seems to be the cultural and social convention to which most people are either trained or find it expedient to conform (Burt, 1937; Downey, 1933; Hildreth, 1949; Koch, 1933; Watson, 1919; Wile, 1934). A satisfactory explanation for the occurrence of left-handedness has not yet been proffered, despite the multiplicity of theoretical conjectures. The hereditary transmission of laterality has come under attack as failing to explain the occurrence of left-handedness (Koch, 1933; Penfield & Roberts, 1959; Rife, 1951) as has the closely allied notion of a dominant cerebral hemisphere determining handedness (Palmer, 1963; Penfield & Roberts, 1959; Zangwill, 1960). Another hypothesis mentioned in the literature to account for the left-handed individual refers to psychological factors. Penfield and Robert (1959) suggest that handedness is determined by multiple factors, one of which is psychological. Hildreth (1949) posits left-handedness as being characterized most by emotional resistance. Wile (1934) is more general in his supposition that left-handedness

may be a tendency not to conform to social conventions. There is also a tendency to ascribe the emergence of left handedness to personality characteristics. However, it is also possible that opposition may be due to frustrations attending left-handedness.

Although references to the relationship between personality factors and left-handedness are occasionally suggested, the writers were unable to find empirical studies of the relationship between left-handedness and any personality variable. Moreover it was felt that all the personality variables alluded to in the literature could be subsumed under the more general rubric of "opposition." It is here posited that left-handedness might be related to oppositional tendencies, i.e., to be in opposition to the demands of society. The present study was conducted to evaluate the hypothesis that left-handedness is associated with oppositional tendencies.

Hermann Rorschach's work with inkblots led him to postulate the existence of a relatively stable personality characteristic which he called "a tendency to opposition." In his book, *Psychodiagnostics*, Rorschach (1942, p. 199) states that "space responses always indicate some sort of oppositional trend". Other Rorschach investigators report clinical evidence that seems to be in agreement with Rorschach's conclusions (Beck, 1944, 1952; Bochner & Halpern, 1945; Hertz, 1935; Phillips & Smith, 1953; Piotrowski, 1947; Rapaport, 1946).

Experimental studies of (space) *S* and "opposition" have given rise to equivocal results. This seems to have been due primarily to methodological differences among these studies. Rorschach interpreters have provided not clear definition of what they mean by "opposition;" *R* (response total) has often not been controlled or a fluency factor (ratio of *S/R* ascertained; frequently group Rorschachs are given in lieu of the standard procedure, and the differing scoring systems utilized by investigators have made inter-study comparisons difficult. Bandura (1954) found high correlations between teachers' ratings of negativistic behavior, and the number of *S* responses which he felt offered support for Rorschach's assumption that the *S* responses represent an oppositional behavioral tendency. Counts and Mensh (1950) reported that hypnotized subjects gave more *S* responses when compared to their own non-hypnotized protocols. Fonda (1951) reported the existence of a positive relationship between the Σ score on the Guilford-Martin Personnel Inventory and *S* responses. As the Σ is assumed to be a measure of contrariness, Fonda felt that his study lent support to Rorschach's hypothesis. Weltman and Wolfson (1964) likewise felt that significant support for white space responses as indicative of oppositional tendencies had been attained in their study in which the relationship between white space responses and oppositional behavior and/or strivings for mastery were studied. Rosen (1952) had also demonstrated a significant relationship between the *S* and the *Pd* scores with psychiatric patients, when diagnosed psychopaths were excluded. Rosen interpreted his results as offering evidence that the white space of the Rorschach was associated with oppositional tendencies. On the other hand Boss (cf Fonda, 1951) and Schachtel (1951) have not been able to link either "antisocial psychopaths" or "delinquents" with *S* response productivity. Suares (1938) also reported few *S* responses in delinquents. Ray (1963) did not find white space responses to be related to oppositional tendencies in Air Force ROTC cadets. Neither Murray

(1957) nor Ingram (1954) has been able to empirically relate *S* to oppositional tendencies. The equivocality may be due to what Murray (1963) describes as methodological inadequacies in controlling or taking into account the total number of Rorschach responses.

This study attempted to avoid some of the methodological errors found in previous research. All subjects were administered individual rather than group Rorschachs and the fluency factor (*S/R*) was controlled. If there is a relationship between left-handedness and oppositional tendencies, it is hypothesized that left-handed individuals will give more white space responses on the Rorschach than right-handed individuals.

Method

Two groups of subjects, 30 left-handed males and 30 right-handed males were administered the three measures of opposition. All subjects were undergraduate male students enrolled in an elementary psychology class (enrollment = approximately 1,100). Male subjects were utilized exclusively to obtain a larger population as the literature (Clark, 1959; Penfield and Roberts, 1959) indicates that the proportion of left-handed males exceeds that of left-handed females. Subjects were selected on the basis of preferred writing hand. All left-handed male students were contacted and tested. The right-handed male students were selected randomly. All *S*'s that were asked to participate in the study did so because they needed the research "credit" for the course. The Rorschach was administered individually to each subject according to the manner described by Klopfer (Klopfer & Davidson, 1962), in a procedure which precluded the examiner from becoming aware of the handedness of the subject.

Scoring

In scoring the Rorschach, an attempt was made to account for distinctions between primary and additional white space responses as well as to control for the fluency factor. As Beck (1952) has clearly specified the kind and type of re-

sponse which he considers to be a white space percept, his location system was utilized. Each space response was then weighted as Beck suggests according to the following criteria.

Main responses:

- | | |
|--|-----|
| 1) Major white space | 2. |
| 2) Major white space with minor solid | 1.5 |
| 3) Minor white space | 1. |
| 4) Minor white space with major or minor solid | 1. |

Additional responses:

- | | |
|--|-----|
| 1) Any major white space with or without major or minor solid. | .5 |
| 2) Any minor white space with or without major or minor solid. | .25 |

A white space response score was then determined as a ratio of S/R to control for the fluency factor.

Results

The results of this study indicated that left-handed males gave significantly more S responses on the Rorschach than did the right-handed subjects. Seven of the left-handers rejected a total of ten cards while four of the right-handers rejected a total of six cards. The left-handed subjects gave a mean of 24.9 responses per Rorschach protocol as opposed to 24.8 for the right-handers. The mean white space score for the left-handed subjects was 22.4 ($SD = 15.0$) and 14.3 ($SD = 10.9$) for the right-handed males. The t test value for the mean differences was found to be 2.35 which was significant at the .025 level.

Discussion

The results of this study indicated that left-handed male subjects gave more White Space responses than right-handed males. If Rorschach's supposition is correct, and if the previous empirical research concerning the determinant is valid, then one may conclude that left-handed individuals are more oppositional than right-handed persons. It is interesting that the findings in this study are supportive of the folklore assumption that sinistrality is somewhat related to opposition.

Speculation about the causal relationship between opposition and left-handedness has been studiously avoided. It is very tempting to conclude that oppositional tendencies in a child (who is basically ambidexterous at early stages of development) fosters the adoption of left-handedness as a way of expressing his opposition to his parents, guardians, society, etc. Such a proposition portrays the child as either stubborn and negativistic or as learning a procedure that will irritate the parents. On the other hand, it is also possible that a left-handed child feels frustrated in a right-hand world. This frustration may foster oppositional tendencies. It is startling to most right-handed individuals to learn that most implements, appliances and household items, are manufactured for right-hand usage. The same is true of toys and sporting equipment. It is as difficult for a child to find a left-handed baseball glove as it is for an adult to find a left-handed set of golf clubs. The learning of writing skills is difficult for a left-handed child since he is deprived of visual feedback. Books are placed on library shelves for the convenience of right-handed persons. One can continue listing various frustrations that the left-handed person encounters in our right-handed society. The oppositional tendencies thus may be the result of these frustrations. At this point, it is more correct to conclude that only a relationship between handedness and opposition has been demonstrated. Only careful developmental studies may answer questions about the cause and effect relationship between left-handedness and opposition.

REFERENCES

- Bandura, A. The white space response and "oppositional" behavior. *Journal of Consulting Psychology*, 1954, 23, 550-554.
- Beck, S. J. *Rorschach's Test. Vol. I: basic processes*. New York: Grune & Stratton, 1944.
- Beck, S. J. *Rorschach's Test. Vol. III: advances in interpretation*. New York: Grune & Stratton, 1952.
- Bochner, R. & Halpern, Florence. *The clinical application of the Rorschach Test*. (2nd. ed.) New York: Grune & Stratton, 1945.
- Burt, C. *The backward child*. New York: D. Appleton Century Co. 1937.

- Clark, M. M. *Teaching left-handed children*. New York: Philosophical Library, 1959.
- Counts, R. M. & Mensh, I. N. Personality characteristics in hypnotically-induced hostility. *Journal of clinical Psychology*, 1950, 6, 325-330.
- Downey, J. E. Laterality of function. *Psychological Bulletin*, 1933, 30, 109-142.
- Fonda, C. P. The nature and meaning of the Rorschach white space response. *Journal of Abnormal and Social Psychology*, 1951, 46, 367-377.
- Hertz, Marguerite R. The Rorschach ink-blot test: historical summary. *Psychological Bulletin*, 1935, 32, 33-66.
- Hildreth, G. The development and training of hand dominance: I-III. *Journal of Genetic Psychology*, 1949, 75, 197-215.
- Ingram, W. Prediction of aggression from the Rorschach. *Journal of Consulting Psychology*, 1954, 18, 23-28.
- Klopper, B. & Davidson, Helen. *The Rorschach technique*. New York: Harcourt, Brace, & World, Inc., 1962.
- Koch, H. L. A study of the nature, measurement, and determination of hand preference. *Genetic Psychological Monographs*, 1933, 13, 117-218.
- Murray, D. An investigation of Rorschach white space responses in an extratensive experience balance as a measure of outwardly directed opposition. *Journal of Projective Techniques*, 1957, 21, 40-42.
- Murray, D. White space on the Rorschach: interpretation and validity. *Journal of Projective Techniques*, 1963, 27, 315-324.
- Palmer, R. Hand differentiation and psychological functioning. *Journal of Personality*, 1963, 31, 445-461.
- Penfield, W. & Roberts, L. *Speech and brain mechanisms*. Princeton, New Jersey: Princeton University Press, 1959.
- Phillips, L. & Smith, G. *Rorschach interpretation: advanced techniques*. New York: Grune & Stratton, 1953.
- Piotrowski, Z. A Rorschach compendium. *Psychiatric Quarterly*, 1947, 21, 70-101.
- Rapaport, D., Gill, M., & Schafer, R. *Diagnostic psychological testing Vol. II*. Chicago: Year Book Publishers, 1946.
- Ray, J. B. The meaning of Rorschach white space responses. *Journal of Projective Techniques*, 1963, 27, 315-323.
- Rife, D. C. Heredity and handedness. *Scientific Monthly*, 1951, 73, 188-191.
- Rorschach, H. *Psychodiagnostics*. New York: Grune & Stratton, 1942.
- Rosen, E. MMPI and Rorschach correlates of the Rorschach white space response. *Journal of Clinical Psychology*, 1952, 8, 283-288.
- Schachtel, E. G. Notes on Rorschach test of 500 juvenile delinquents and a control group of 500 non-delinquent adolescents. *Journal of Projective Techniques*, 1951, 15, 144-172.
- Suares, N. Personality development in adolescence. *Rorschach Research Exchange*, 1938, 3, 2-11.
- Watson, J. B. *Psychology from the standpoint of a behaviorist*. Philadelphia: Lippincott, 1919.
- Weltman, R. & Wolfson, W. Rorschach S: oppositional tendencies or mastery strivings. *Perceptual and Motor Skills*, 1964, 18, 821-824.
- Wile, I. S. *Handedness: right and left*. Boston: Lathrop, Lee, & Shepard, 1934.
- Zangwill, O. *Dominance and its relation to psychological function*. London: Oliver & Boyd, 1960.
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Artistic Creativity and Adaptive Regression in Third Grade Children¹

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Summary: The relationship of artistic creativity to the personality variable of adaptive regression was investigated in 27 creative and 30 uncreative third grade children. Two composite Rorschach measures of adaptive regression did not differentiate the two creative groups. A new measure of adaptive regression composed of Defense Demand and Percentage of responses with primary process as the measures of primary process, and Sum Form Level and number of Populars as the measure of control, did distinguish the creative from the uncreative children. A multiple correlation indicated that the control measures were more effective than primary process measures in differentiating the creative from the uncreative subjects. In brief, the creative children seemed to be "adapting" more than "regressing."

This study investigates the relationship of artistic creativity to adaptive regression in third grade children. Adaptive regression is defined as the ability to use inner resources in a controlled way. E. Kris (1952) developed this concept and has stressed the connection between creativity and adaptive regression. Kris first described the two phases of artistic creativity—inspiration and elaboration—in terms of changes in the degree of ego control. In inspiration, the ego relaxes control (or "regresses") while in elaboration, the ego reasserts its position (or "adapts"). Other theorists (Werner, 1957; Koestler, 1964) have formulated similar hypotheses about the relationship of creativity to the availability of primitive and mature levels of functioning. These theoretical statements have resulted in empirical tests.

Several studies of creative adults have utilized Rorschach measures of adaptive regression. Myden (1959) selected highly-creative adults by choosing twenty subjects from the "top rank" of diverse fields

in the arts, who were compared with controls drawn from "leaders" in business and professional fields.

Hersch (1962) also studied a group of eminent adults. His subjects, matched for age, intellectual level, and Rorschach response productivity, were composed of twenty normal men, twenty hospitalized schizophrenics, and a group of twenty eminent artists originally studied by Anne Roe (1946). He used the Rorschach Genetic Scoring system, developed by Phillips, Kaden, and Waldman (1959) and classified three types of responses as mature and three others as primitive. It was predicted that the artists would have both more mature and more primitive responses. The hypotheses were corroborated in four of the six categories when the artists were compared to the normal subjects. The artists as compared with the schizophrenics had significantly more of all three types of mature responses, but more of only one type of primitive response. Hersch's study supports the theory that creativity is associated with adaptive regression, but was somewhat weakened because his control groups, although matched for age and IQ, differed markedly from the artists in education and social class.

Pine (1959) and Pine and Holt (1960) have explored the relationship between creativity and adaptive regression in college students. Pine studied small samples of both male and female undergraduates.

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He used the Thematic Apperception Test to measure literary creativity, drive expression, and drive control, and devised additional measures of creativity. His prediction that creative subjects would display both more drive expression and control was supported in general. However, the criteria for creativity were so diverse and complex and the sample of the subjects so small that the findings must be regarded as suggestive.

In a later study (1960), Pine and Holt used the system of scoring primary processes in the Rorschach test devised by Holt and Havel (1960). Primary process refers to thinking that is dominated by drives, and may be expressed in the Rorschach through sexual or aggressive content, through distortions in the organization of the blot, in the underlying thought processes, or in the verbalization of the material. The subjects and the criteria for measuring creativity in the Pine and Holt study were the same as in the earlier study. They predicted that the amount of primary process expressed on the Rorschach is unrelated to the quality of creative production but that effective control of primary process is associated with greater creativity. Among the males, these predictions were upheld on a variety of creativity tasks, but female subjects produced weak and inconsistent results. Again, these results are considered suggestive because of the limited number of subjects, but Pine's findings on the differences between male and female subjects are noteworthy.

Cohen (1961) also studied college students and focussed on the relationship between creativity and adaptive regression. The creative group consisted of twenty advanced undergraduate art students judged as highly creative by their professors, who were compared with twenty randomly selected undergraduate art students with the same degree of art training. (The sex of the students is not stated.) The Rorschach test, scored according to Holt's scheme, was used. The two groups differed on the Form Level of Responses in which primary process is mentioned. The Form Level of Responses with Primary Process was de-

veloped by Cohen as an operational measure of adaptive regression since it reflects the degree to which perceptual accuracy is maintained during the production of primary process material.

Doris Silverman (1963) studied 40 fourth grade gifted children. She estimated their creativity by having artists judge four paintings done by each child. The child verbalized his thoughts and feelings while painting and these verbalizations were scored for adaptive regression, using a modification of Holt and Havel's (1960) system. When individual paintings were considered, the relationship of degree of adaptive regression to creativity of a specific painting was as anticipated. However, when subjects were compared with one another, the results were less conclusive. Across subjects, adaptive regression scores did not correlate with the subjects' average creativity score.

The above studies indicate the extent of research on the relationship of adaptive regression to creativity. Although the reports which have adult subjects have generally positive findings (Hersch, 1962; Myden, 1959); the investigations of adolescents (Pine & Holt, 1960; Cohen, 1961) and children (Silverman, 1963) are less conclusive and indicate a need for careful study of this proposed relationship at various age levels.

Method

Subjects

Artistically creative children are the subjects of this research. Art is a medium particularly well suited to an investigation of creativity in children because it is not overwhelmingly influenced by intellectual factors, nor does it require years of training. All the children enrolled in the third grades of four schools in a suburban town in Massachusetts were included in this study. The third grade was selected because it is reported by Torrance (1962) to be a period of relatively high creative expression preceding the "fourth grade slump." Also, the third grade may be the lowest age at which it is advisable to score the Rorschach for adaptive regression (Holt, 1964, personal communication). The town chosen as

the locus of this study is relatively homogeneous with regard to social class.

Three drawings were collected in each third-grade class. A child was included in the study if he contributed at least two drawings. One hundred and ninety-nine children contributed three drawings, and 29 children contributed two drawings. There were 110 boys and 118 girls in the total group.

Getzels and Jackson (1960) and Torrance (1962) used as a cutting point the top and bottom 20% of scores on creativity tests to select contrasting creative and uncreative groups. In order to increase the chances of obtaining truly creative and uncreative groups, this study planned to use the top and bottom 15% of the children. Ultimately 27 highly creative and 30 uncreative children were selected according to the creativity criterion. Fifteen boys and twelve girls were in the creative group and 17 boys and 13 girls were in the uncreative group.

The Measure of Creativity

Professional artists who were acquainted with children's art work were used as judges. The assumption is made that the judgment of creativity in children's drawings is analogous to artistic and literary criticism. Despite many viewpoints, considerable consensus exists among qualified critics of children's art work, and this consensus can be considered a sign of the validity of their pooled judgments.

Although it is possible to instruct judges to look for component "signs" of creativity, this might lead to confusion and to distortion of the judges' natural choices. Instead, the judges rated the pictures in terms of their own definition of creativity. This technique of assessing creativity was first devised by Lowenfeld and Beittel (1959) and has also been described by Silverman (1963).

The judges in this study were exposed to a single set of pictures at one time. Judges were instructed to divide each set of pictures into six scoring groups, corresponding to a normal distribution. These scores were then subjected to a factor analysis and canonical analysis which indicated the ranking of the draw-

ings in comparison to the rest of the drawings in that set of 228 pictures and also the degree of consensus on each set of drawings.

The canonical correlation between the judges' ratings on the first two sets of drawings is .39 (chi square 102.38, d.f. 80, $p = < .05$). This correlation indicates a modest but significant degree of overlap between the two sets of judges.

In order to determine whether the drawing would be judged similarly by the same judge on another occasion, retest of six of the judges was done after a period of three to five weeks. A sample of eighty pictures was again given to the judges. The retest reliability ranged from .59 to .93, with a mean of .80. This indicates that the relatively low correlation between the first two sets of pictures is a result of the pictures being only moderately comparable and is not due to variability within each judge.

A principal components factor analysis was done to determine the consensus of the judges on each set of drawings. On the first set (which had ten judges), the principal factor accounted for 40.24% of the variance in the matrix of the judges' ratings. The other factors were much less powerful in their determination of the entire group ratings. The principal factor was used as an index of the subjects' creativity. On the second set of drawings, (eight judges) the principal factor accounted for 35.08% of the variance in the matrix of the judges' ratings.

The third set of drawings was viewed by five judges who were of known high consensus, as indicated by their factor loading on the principal factor of the first and second sets of drawings. In the third set of drawings, the principal factor accounted for 48.01% of the variance.

Thus, the creative and uncreative children were selected on the basis of achieving criterion scores on the principal factor in two of the three sets of drawings. Selecting children by using the most extreme factor scores in two of the three sets of drawings would allow for the expected variation in the individual child's creative output. A child could fall into the

highly creative or uncreative group if he markedly deviated from the group two out of three times. He would not have to perform on all occasions in a "creative" manner.

No significant differences were found between the creative and uncreative children on the variables of sex, school achievement, social class (Hamburger, 1957) and intelligence, as measured by the Stanford-Binet (1937) or California Mental Maturity test.

The Measures of Adaptive Regression

Adaptive regression is a complex concept, involving a balance between the expression of primitive material and the control of that material. Two Rorschach measures of adaptive regression were used with the hypothesis that both measures would distinguish the creative from the uncreative children.

"Defense Demand X Defense Effectiveness" is a measure devised by Holt (1963). Defense Demand is directly related to the amount and intensity of primary process. Defense Demand is scored for any response containing primary process and expresses the "shock value" of the response. It indicates the degree to which controlling measures must be undertaken in order to make the response socially acceptable or non-threatening. Defense Effectiveness is measured in each response scored for Defense Demand and indicates how effective the defensive measures are in reducing or preventing anxiety. Defense Demand X Defense Effectiveness is an index of adaptive regression in that a high "DD X DE" score indicates effectiveness in controlling primary process.

The second measure of adaptive regression is dependent upon an estimate of the Form Level of the response. Mayman (1960) offers a manual of scoring Form Level which is used in this study. His scheme keeps Form Level considerations distinct from organization, location, etc., and also provides numerical weights for the different scores. Form Level indicates how well the blot fits the percept, thus giving an important measure of the adequacy of reality contact. According to

Mayman, good Form Level indicates good control while poor form level indicates poor control.

Cohen (1961), working with artistically creative art students, discovered that his creative subjects were differentiated from uncreative subjects on the basis of higher Form Level scores scored according to Mayman (1960), which were associated with primary process responses. This score of Form Level of primary process responses was thought to reflect the degree to which perceptual accuracy and control is maintained during the production of primary process material. Cohen suggested that Form Level of primary process responses is an operational measure of adaptive regression. This speculation gains support from his finding that the Form Level score of responses not scorable for primary process did not differentiate his creative and non-creative groups. Thus, Cohen's measure of "Form Level of Primary Process" responses will be used as the second measure of adaptive regression.

Data Collection

Drawings

The drawings were collected from the entire class in the usual group-seating arrangement. Each child was provided with a piece of 9 x 12 drawing paper for each drawing and was told to use his own crayons. After twenty-five minutes, the class was encouraged to finish working and papers were collected five or ten minutes later. The introduction to the drawing session was:

I am interested in the kinds of pictures that third grade children make. I would like you each to draw the kind of picture that you most like to draw. Take your time and make the most interesting and the very best picture that you can draw.

The Rorschach Test

The Rorschach test was administered individually to the twenty-seven artistically creative and the thirty uncreative children. Standard procedures were used for administering the Rorschach.

Scoring the Rorschach Measures of Adaptive Regression

Reliability. The scoring of primary process material was checked by ascertaining the extent of agreement with a scorer of known skill (Reeva Safrin), using a sample of twenty records. The percentage of agreement between two scorers and the rank-order correlation were used as the reliability statistics. The responses which were included in the percentage of agreement score were only those in which either or both the scorers reported the variable. This measure eliminated artificial inflation of the reliability score by excluding the "large number of negative responses upon which the judges could easily agree" (Lesser, 1958). The rank-order correlation was used for variables in which there was systematic differences between the two raters, in that the absolute scores were not important so long as each scorer ranked the subjects similarly.

The percentage of agreement on what constituted a response was 94%. Only responses on which both scorers agreed were included in the determination of reliability of the remaining variables. Both scorers agreed upon 355 responses and this number was used as the total *N* of responses. All of the reliability measures

reported here (see Table 1), whether calculated by the percentage of agreement or rank-order correlation are acceptable although the measures involved in Defense Effectiveness are marginal.

Results

Results Using Original Measures

Defense demand X defense effectiveness. A *t* test reveals no significant findings discriminating the creative boys from the uncreative boys or the creative girls from the uncreative girls, nor is the entire creative group significantly distinguished from the uncreative group. Since an important element of the Rorschach test is the total number of responses given, a *t* test of the significance of the difference between the mean number of responses in the creative and uncreative groups was done, which reveals no significant differences. This finding is important as it indicates that there is no need for statistical processes to partial out the effect of different numbers of the total responses among the different groups.

Sum of Form Level of Primary Process Responses

The second measure of adaptive regression involved summing the Form Level scores of responses with primary

Table 1
Interrater Reliability of Scoring Rorschach Variables

Variable	Number of Responses in which Variable Occurs	Agree	Disagree	Interrater Reliability
Delimiting response	381	355	26	94%
Form Level	355	258	97	73%
Responses with Primary Process	190	153	37	81%
Defense Effectiveness	177	87	90	49%
Defense Demand				.93 ^a
Defense Demand X Defense Effectiveness				.61 ^a
Popular responses				.71 ^a

^a Rank order agreement

process. A *t* test reveals that there are no significant differences between the creative and uncreative groups on the mean scores of the sum of Form Level of responses with primary process.

Cohen found that his creative and uncreative groups were not discriminated by the sum of the Form Level scores of responses *without* primary process. The artistically creative boys in this study, however, are distinguished from the uncreative boys on this variable. A *t* test indicates that this is a significant difference ($t = 2.05$, $df = 30$, $p < .05$), indicating that creative boys have higher Form Level scores than uncreative boys when responses that do not have primary process are considered. The means of the creative boys are more in line with the means of both girls' groups while the uncreative boys deviate sharply from the rest of the Ss.

Neither of the original measures of adaptive regression significantly discriminated the highly creative children from the uncreative Ss. Several explanations may be considered.

The usefulness of the measure Defense Demand X Defense Effectiveness may have been limited by defects in the measurement of Defense Effectiveness. Defense Effectiveness had modest interrater agreement and was generally scored over a very small range (+1 to -1). This consequently restricted the range of Defense Demand X Defense Effectiveness scores. Defense Demand, on the other hand, seemed to be a good measure of amount of primary process. Interrater reliability was dependable (rank-difference correlation of .93). In the course of analyzing the Rorschach protocols, Defense Demand seemed like a suitable measure of important elements of primary process, namely the intensity of the primary process expression, and the frequency of primary process expression.

The second measure of adaptive regression, the Sum of Form Level of primary process responses, had the dual merits of face validity and interrater reliability of its component parts (Form Level agreement 73%, Responses with primary process, agreement 81%). How-

ever, this measure failed to discriminate between creative and uncreative groups. The clue may be found in the results of a closely-related measure, the Form Level of responses with no primary process, which significantly discriminated the creative boys from uncreative boys. Various measures of primary process indicate trends for creative boys to express more primary process than uncreative boys. The two elements of adaptive regression—more primary process and better control (as shown by higher Form Level)—both seem to be present in the creative boys but not simultaneously in the same response. The creative boys in this study may be showing an early stage of Cohen's (1961) finding that the Form Level of primary process responses is higher in creative subjects. Although these creative boys are disorganized by primitive material they tend to display more of it and they have better Form Level when there is no primary process than their uncreative counterparts.

Development of a New Measure

The essentially negative findings on the original measures of adaptive regression prompted a reconsideration of the basic elements of the notion of adaptive regression. Both measures that were tried incorporated the balance between primary process and control that is the crux of the concept of adaptive regression. The failure of the original measures to support the hypothesis had revealed the weaknesses of these measures but had not suggested defects in the basic theory linking adaptive regression and creativity. Hersch (1962) and Myden (1959) had reported positive findings in their investigations of the relationship of adaptive regression to creativity in adults. The hypothesis did not seem less salient when applied to children.

In working with the data, primary process seemed relatively easy to measure despite the apparent complexity of the concept. The "control" aspect of adaptive regression at first appeared to be the simpler term but turned out to be more ambiguous and more elusive to measure. What is controlled and how do controls

operate? Within the adaptive regression definition, the first question is easily dealt with: controlling primary process is the object of the capacity to control. But what is control, and how does it operate? In psychoanalytic terms, control is an aspect of the "secondary process," which is the logical, mature, usually conscious, highly cognitive side of thinking. In operational terms, just as primary process is the capacity to use inner resources, control is the ability to deal with the outer reality and all its demands and expectations.

Keeping in mind the principle of balance between primary process and control, what appeared to be the best measures of each element?

Measures of Primary Process

Although Defense Demand seemed to be a good measure of primary process, it did seem to have one weakness in that it measured the intensity of primary process but neglected the element of spread. Using a measure of percentage of responses with primary process (% Primary Process) corrected the weakness of using Defense Demand alone. On the other hand, using only % Primary Process would tend to inflate the primary process measure of subjects with short records. If both measures were used, they would overlap a great deal, but one would have a summary measure that was sensitive to both the intensity and scope of primary process expression. Interrater reliability for responses with primary process was also good (81% agreement).

Measures of Control

The Holt measures of control having been found unsatisfactory and unreliable, the most promising index of control seems to be the Form Level ratings. Interrater reliability was good (73%). Form Level is a measure of the fit between blot and perception. Good Form Level is a generally acknowledged index of good control. As Mayman states (1960), the development of good form perception marks the "process of coming to terms with an outer reality with structural configurations stable enough to withstand the autistic pull of moods, wishes or impulses."

Another conventional Rorschach scoring category, the number of Popular responses, had impressed the investigator during the data analysis as being a measure of good control. Occasionally a child, usually in the context of a long protocol, would have a low Sum Form Level, often with many unusual or primary process responses, but still seemed to maintain good reality contact and have the elasticity to return to good controls. It was realized that a large number of Populars was often the clue to this intuition of good control. Popular responses are in effect a special case of the Good Form Level response. Although a large number of Popular responses in adults is interpreted as a measure of stereotypy, this may not be the case with children. The presence of Popular responses indicates that the child is grappling with reality and not enforcing his own idiosyncratic view on the world. A large number of Populars may be seen as an internalization of the social modes of perception and control.

Having decided on these four measures, Defense Demand and % Primary Process as measures of primary process, and Sum Form Level and Populars as measures of control, the four variables were combined into a single measure of adaptive regression. For the 32 boys and 25 girls in the sample, each variable was ranked from 1 (low) to 4 (high). The children were divided into quartiles, keeping the sex separate. Two important advantages are gained by ranking subjects rather than using raw scores. First, the known sex differences on the variables could be equalized by ranking the girls and boys separately, thus taking into account the different ranges of the boys and girls in raw scores on each variable. The second advantage of using ranked scores was to reduce the effects of the markedly deviant high or low scorer. A correlation using raw scores would be heavily influenced by a sharply deviant score on any one of the four variables. Using ranked scores reduces this effect.

Results Using New Measures

A multiple correlation was done on the "Four Variable" measure, using the

Table 2
Inter correlations of Creativity with Ranked Scores of
"Four Variable" Measures
Boys

	Populars	Sum Form Level	Primary Process %	Defense Demand	Creativity
Populars	1.00	.11	.05	.19	.56
Sum Form Level		1.00	-.13	-.15	.20
Primary Process %			1.00	.63	.20
Defense Demand				1.00	.08
Girls					
Populars	1.00	.27	-.07	.13	.08
Sum Form Level		1.00	-.32	-.52	.20
Primary Process %			1.00	.47	.13
Defense Demand				1.00	-.02
Total Group					
Populars	1.00	.18	-.00	.16	.35
Sum Form Level		1.00	-.21	-.31	.20
Primary Process %			1.00	.56	.17
Defense Demand				1.00	.04

ranked scores, with the same creativity criterion that had been used in all previous analyses. (See Table 2). In the boys, the number of Populars is the only single measure with a significant relationship to creativity ($r = .56$). When all four variables are included, the multiple regression correlation coefficient is .62 ($F = 4.3096$, $df\ 4, 27$, $p < .01$), indicating a moderate degree of relationship between the combination of all four variables and creativity in boys.

Sum Form Level, which is a measure of control, displays the highest correlation with creativity in the girls (.20) but this correlation is not significant. The multiple correlation coefficient of the combined four variables with creativity is .29 for the girls, indicating a slight but non-significant relationship.

In the total group of boys and girls combined, the two measures of control (Populars and Sum Form Level) are negligibly correlated to each other (.18) while the two measures of primary process (Primary Process % and Defense Demand) have a moderate degree of relationship (.56). The Popular response as a measure of control correlated negligibly with the two measures of primary process (— .00 with Primary Process % and .16 with Defense Demand), while Sum Form Level has a slight negative correlation with both primary process measure (— .21 with Primary Process % and — .31 with Defense Demand). For the whole group the number of populars shows a slight relationship (.35) with the creativity criterion, which is significant at the .01 level. Sum Form Level is slightly

Table 3
Chi-Square Analysis Using the "Four Variable" Measure

"Four Variable" Combined Score	Creativity					
	Boys		Girls		Total	
	High	Low	High	Low	High	Low
5 - 9 (low)	3	11	3	7	6	18
10-14 (high)	12	6	9	6	21	12

Fisher	Fisher	$\chi^2 = 6.82$
Exact	Exact	
Test	Test	df = 1
p. .025	p = NS	p .01

correlated with creativity, but this correlation is not significant. The two measures of primary process are not correlated significantly with creativity.

A combination of all four variables provides the highest correlation with creativity. The multiple correlation for the entire group of boys and girls is .43 ($F = 3.0195$, d.f. 4, 52; $p < .05$), indicating a fair degree of relationship between the combination of four variables and the creativity criterion.

The multiple correlation indicates the efficiency of the Four Variable measure and its component parts in discriminating creativity. To better visualize how well the measure discriminated individuals, a chi-square analysis was done. The chi-square (See Table 3) revealed that the creative boys had significantly higher score ($p = .025$) on the "Four Variable" measure than the uncreative boys, the creative girls were not significantly distinguished from the uncreative girls, and the total creative group was significantly higher than the total uncreative group at better than the .01 level of probability. The chi-square analysis also discloses that two-thirds of the "misses" occur in the uncreative group. Since it was recognized in the plan of this study that children who were creative in fields other than art might be included in the uncreative group, this finding is not surprising.

Discussion

This "Four Variable" measure does seem to discriminate creative from uncreative children more successfully than the original measures of this study, Defense Demand X Defense Effectiveness or Form Level of responses with primary process. It is our contention that creative children do not succeed in combining primary process and control simultaneously or, in Rorschach terms, in one response, and that this inability accounts for the failure of these earlier measures to differentiate the creative from the uncreative children. According to this view, it is unrealistic to anticipate that primary process and control will be displayed simultaneously in the nine year old child.

It should be noted, however, that the measures of control were more effective predictors of creativity than either of the measures of primary process. Popular responses in the boys and total group contributed most heavily to the total correlation with creativity. For the girls, Sum Form Level accounted for most of the slight correlation with creativity. The individual contributions of the two measures of primary process (Defense Demand and % Primary Process) are either negligible or slight, although the highest correlation with creativity occurs when both primary process and control elements are included. But it is control, and especially

the Popular responses, which accounts for most of this correlation. In brief, in displaying adaptive regression the creative children seem to be adapting more than they are regressing.

In the original formulation of hypotheses for this research primary process was identified as the presumed inner source of creativity. The findings of this study, which emphasize the connection between creativity and control, lead one to question the importance of primary process as the "source" of creative experience. If creative children are not distinguished from uncreative children on the dimension of primary process, then primary process may not be the only source of creativity. This is not to say that primary process may not contribute to creativity, as the highest correlation with creativity is achieved when control and primary process both are included in a measure. But it is control that accounts for the major part of the correlation. The importance of these control measures, and especially Popular responses, brings to mind Schachtel's (1959) image of the creative person as "grasping reality." In the children of this study, especially the boys, the ability to "grasp reality" distinguishes the creative and uncreative groups. In discussing the character of the creative artist, Schachtel stresses the openness of the artist to the perception of reality, the attention which the artist devotes to the object, and the pleasure that the artist attains in grasping reality. Schachtel's view that the essence of creative perception lies in experiencing and expressing reality is consistent with the results of this research.

REFERENCES

Cohen, I. H. *Adaptive regression, dogmatism and creativity*. Dissertation Abstract. Michigan State University, 1961, 21 (11), 3522-3523.

Cooley, W. W. & Lohnes, P. R. *Multivariate procedures for the behavioral sciences*. New York: John Wiley & Sons, 1962.

Getzels, J. & Jackson, P. W. Occupational choice and cognitive functioning: Career aspirations of highly intelligent and highly creative adolescents. *Journal of Abnormal and Social Psychology*, 1960, 67, 119.

Hamburger, M. A revised occupational scale for rating socio-economic class. Teachers College. Columbia University, Mimeo., May 1957.

Hersch, C. The cognitive functioning of the creative person: A development analysis. *Journal of Projective Techniques*, 1962, 26 (2), 193-200.

Holt, R. R. & Havel, J. *Rorschach psychology*. Rickers-Ovsiankina, Marie A. (Ed.). New York: John Wiley, 1960, 263-315.

Holt, R. R. *Rorschach manual for primary process scoring*. New York University. Mimeograph, 1963.

Koestler, A. *The age of creation*. New York: Mac-Millan, 1964.

Kris, E. *Psychoanalytic explorations in art*. New York: Internat'l. Universities Press, Inc., 1952.

Lesser, G. S. Conflict analysis of fantasy aggression. *Journal of Personality*, 1958, 28, 29-41.

Lowenfeld, V. & Beittel, K. Interdisciplinary criteria of creativity in the arts and sciences: A progress report. *NAEA Yearbook*, 1959, 35-43.

Mayman, M. Form level scoring manual. Menninger Foundation, Mimeograph, 1960.

Myden, W. Interpretation and evaluation of personality characteristics involved in creative production. *Perceptual and Motor Skills*, 1959, 9, 139-158.

Phillips, L., Kaden, S. & Waldman, M. Rorschach indices of developmental level. *Journal of Genetic Psychology*, 1959, 94, 267-285.

Pine, F. Thematic drive content and creativity. *Journal of Personality*, 1959, 27 (2), 136-151.

Pine, F. & Holt, R. R. Creativity and primary process: A study of adaptive regression. *Journal of Abnormal and Social Psychology*, 1960, 61 (3), 370-379.

Roe, Anne. Artists and their work. *Journal of Personality*, 1946, 5, 1-40.

Schachtel, E. *Metamorphosis*. New York: Basic Books, 1959.

Silverman, Doris K. Adaptive regression and creativity: A study of children's verbalizations while painting. Unpubl. Ph.D. thesis, Graduate School of Arts and Sciences, New York University, 1963.

Torrance, E. P. *Guiding creative talent*. Englewood Cliffs, New Jersey: Prentice Hall, 1962.

Werner, H. The concept of development from a comparative and organismic point of view. Harris, D. B. (Ed.). *The concept of development: An issue in the study of human behavior*. Minneapolis: Univ. of Minn. Press, 1957.

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A Note on the Long-Range Stability of Selected Rorschach Scores¹

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Summary: As part of a broader longitudinal study, 28 boys were administered the Rorschach at ages 14, 17 and 24, and 24 girls at ages 14 and 17; half of each sample was also tested at age 10. The long-range stability of some of the main standard scoring categories (W, Sum C, M, d-dr and R) was assessed by product moment correlations. The results indicate a significant and consistent stability for all of these scoring categories after age 14. The scores at age 10 give less clear-cut and consistent results.

One of the basic assumptions in the use of the Rorschach technique is that it can reflect enduring aspects of personality organization and stable individual differences. Such an assumption underlies the various rationales for the interpretation of the formal Rorschach scores. Data on the long-range stability of these traditional Rorschach scoring categories are extremely meager. Longitudinal studies are hard to come by, and the few existing ones have reported only sparse data relevant to the issue of the stability of individual differences.

Kagan (1960), using subjects drawn from the Fels Research Project, investigated the stability of a few standard Rorschach scores (*R*, *M*, *FM*, *H*) over a six-year period, with tests conducted at ages 10, 13, and 16. A significant degree of stability (ϕ coefficients of around .45) was found for *R* and *M*, although results were less consistent for girls than for boys. Ames (1960) reported significant consistency of content of responses over the adolescent years.

The purpose of the present study was to test the stability of some of the main Rorschach scoring categories from childhood to young adulthood. The subjects, 28 males and 24 females, participated in an extensive longitudinal study by Witkin, Dyle, Fatterson, Goodenough & Karp

(1962). This study centered on the concept of psychological differentiation. The subjects were drawn from Brooklyn public schools and were predominantly of Jewish middle-class background. Their IQs ranged from average to superior, with a mean of around 120.

The boys were administered a Rorschach in standard fashion at ages 14, 17 and 24, and the girls at ages 14 and 17; half of the male and female samples had also had the Rorschach at age 10. Different examiners were used at different ages; the effect of this, if any, could only be to lower the stability of Rorschach results. Some of the main standard scoring categories were used for the longitudinal analysis.

Results*

The stability of individual differences for each Rorschach scoring category was assessed by product-moment correlations between the scores at different ages. Table 1 gives the results for male and female subjects separately.

The main trend of the results is quite clear and consistent. (1) From the age of 14 and on, all the scoring categories show high stability over 3, 7 or even 10 year intervals, the only exception being sum C in the female group. By comparison with this overall stability, the variations in the stability of specific scoring categories at different age intervals, or between the sexes, are relatively minor and cannot be meaningfully interpreted from these data. (2) The scores at age 10 (available for only half of each sample) give

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Table 1
Stability of Selected Rorschach Scores

Males						
Ages compared	N	R	W	d, dd, dr.	C	M
10 vs 14	13	.33	.28	.02	.16	.20
10 vs 17	14	.13	.01	.14	.32	.53*
10 vs 24	14	.49	.11	.12	.09	.65*
14 vs 17	27	.89**	.70**	.81**	.75**	.54**
14 vs 24	27	.73**	.59**	.87**	.60**	.46**
17 vs 24	28	.75**	.77**	.80**	.59**	.79**

Females						
10 vs 14	12	.11	.58**	— _a	.67**	.24
10 vs 17	12	.01	.74**	— _a	.76**	.29
14 vs 17	24	.69**	.91**	— _a	.25	.82**

^a Occurrence of this category too infrequent to evaluate.

* $p > .05$

** $p > .01$

less clear-cut and consistent results; the only scoring categories showing significant stability are *M* for the boys and *W* and sum *C* for the girls.

In the most narrow sense, these findings can be interpreted as an indication of the long-range reliability of the traditional Rorschach categories through adolescence and even into adulthood. In a broader sense, these findings lend support, or at least are highly consistent with the assumption that the structural aspects of the Rorschach are an expression of enduring individual differences in the organization of subjective experience, and are capable of reflecting some stable aspects of personality or character style. The validity of the structural aspects of Rorschach organization is likely to be found primarily in relation to other independent measures of cognitive styles, preferred modes of defense, and selected character traits, rather than, as has often been done, in relation to isolated or transient behavioral outcomes or symptoms.²

The less clear-cut results with the 10-year-olds have limited meaning because of the small sample, yet they are consistent with the assumption that before adolescence Rorschach performance is more influenced by momentary factors and is a less reliable reflection of basic character structure, a structure which itself becomes consolidated only during adolescence.

The stability of individual difference does not imply that the Rorschach scores are not sensitive to age trends. Table 2 shows that the means for all scoring categories, except Sum *C* for both sexes and *R* for girls tend to increase with age; a *t* test of the difference between the means at age 14 and 24 shows the increase to be significant ($p > .01$) and *R* and *d-dr*, in the male sample.

One may speculate that within the broad framework of a consistent individual style, significant developmental changes, at least after childhood, will be expressed by relatively small changes in scores, and more by changes in the specific content and emotional tone of some of the more idiosyncratic responses. This expectation is consistent with clinical impressions, as spelled out, for instance, in the study by Schafer (1958) of Rorschach retest results after long-range psychotherapy.

² The relationship of these formal scores to some measures of cognitive style, IQ, ratings of defense and personality impressions, as well as some of the ways in which change rather than consistency is expressed in these records, will be reported in later studies.

Table 2
Means of Selected Rorschach Scores at Different Ages

Males						
Age	N	R	W	d, dd, dr.	SC	M
10	14	22.9	5.9	4.1	1.4	1.4
14	27	<u>23.1</u>	7.7	<u>3.2</u>	1.3	2.5
17	28	<u>26.5</u>	8.0	<u>4.6</u>	1.6	2.9
24	28	<u>32.4</u>	8.2	<u>6.3</u>	1.4	3.5
Females						
10	12	24.4	3.3	—	1.7	1.7
14	24	16.2	8.2	—	1.8	2.5
17	24	19.4	8.2	—	1.8	2.7

Note — The difference between the underlined means at age 14 and 24 is significant at p. 01.

REFERENCES

- Ames, Louise B. Constancy of content in Rorschach response. *J. gen. Psychol.*, 1965, 96, 145-164.
- Kagan, J. The long-term stability of selected Rorschach responses. *J. consult. Psychol.*, 1960, 24, 67-73.
- Schafer, R. On the psychoanalytic study of retest results. *J. proj. Tech.*, 1958, 22, 102-110.
- Witkin, H. A., Dyk, Ruth B., Fatterson, Hanna F., Goodenough, D. R., & Karp, S. A. *Psychological Differentiation*. New York: Wiley, 1962.
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Structural vs. Interpretive Ambiguity: A Cross Cultural Study with the Holtzman Inkblots¹

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Summary: The concepts of structural vs. interpretive ambiguity were examined, and the measures of each were defined using the 45 blots of the Holtzman Inkblot Test (HIT). The ambiguity measures were taken from two distinct sets of four student samples with diverse cultural backgrounds. Structural ambiguity ratings were also made by a sample of professional psychologists. The nature and degree of relationship between the structural and interpretive ambiguity measures was determined for each of the four cultural groups, and the extent of agreement among the groups was obtained for both measures. Findings indicated that the nature of the relationship between the two measures is an inverse one, with blots rated low in structural ambiguity receiving high interpretive scores and vice versa. Results showed high agreement among the student samples, as well as with the sample of psychologists, regarding the structural measure, and substantial agreement was also found among the student samples on the interpretive measure of ambiguity.

Luchins (1950), in an article treating various concepts of ambiguity, argues that the term ambiguous should not be conceived of as being synonymous with a low degree of structural clarity. As he defines the term, ambiguity does not refer to the degree of structuralization of the stimulus, but rather "to a range of possible structuralizations." A similar concept was developed by Bijou and Kenny (1951) in their attempts to establish ambiguity values for the TAT cards. Murstein (1960) has sought further to clarify the distinction between the two concepts of ambiguity by assigning the term *structure* to the physical organization of the properties of the stimulus, while reserving the term ambiguity to refer to the "uncertainty in meaning." As he states in a more recent article, (Murstein, 1964), "Ambiguity is thus a property of the thematic *response* and is to be

distinguished from *physical structure* which is a function of the physical properties of the card."

The distinction being made here is that between the variability in the degree of structure inherent in the physical stimulus, and the variability in the interpretations of, or the responses to, the stimulus made by the perceiver. This being the case, the present authors have chosen to refer to the former as *structural ambiguity* and the latter, since it represents uncertainty of meaning or interpretation, as *interpretive ambiguity*.

Both Bijou and Kenny (1951) and Murstein (1958) have indicated that a study of the nature of the relationship between these two concepts should be undertaken. The present study sought to examine this relationship, not as it operates within a single socio-cultural system, but rather as it exists among individuals with a diversity of cultural backgrounds. Also, since there should be no a priori assumption that either the structural or interpretive notions of ambiguity are defined in a similar manner across cultures, the authors further wish to explore the effect of differential cultural in-

¹ The data on the four cultural samples from which measures of interpretive ambiguity were generated is part of a larger project supported by NIMH Grant 10273.

² Now at the Biometric Laboratory, the George Washington University, Washington, D. C.

fluence on the interpretation of each of the conceptualizations.

Purpose

The purpose of the present research was threefold:

(1) To determine the extent of agreement on a measure of *structural ambiguity* among four groups of the Ss with divergent cultural backgrounds, and a sample of American psychologists serving as a reference group.

(2) To determine the extent of agreement on a measure of *interpretive ambiguity* obtained from four groups of Ss who have cultural backgrounds similar to the Ss from whom structural ambiguity measures were obtained.

(3) To determine the nature and degree of relationship between measures of *structural* vs. *interpretive* ambiguity in each of the four cultural groups under study.

Method

Structural Ambiguity Ratings

Subjects. Ss involved in making the ratings of structural ambiguity were obtained from five groups; four were samples of students and one group was a sample of professional psychologists.

The student samples consisted of 10 Ss each from the countries of Mexico, Germany, China (Taiwan), and the United States. At the time, all were undergraduates at universities or colleges in the Washington, D.C. area and all volunteered to participate in the study. Each student sample was equally composed of males and females.

The sample of 20 psychologists who agreed to participate in the study were all located at the Veterans' Administration Hospital at Perry Point, Maryland at the time the study was conducted.

Stimuli. The stimuli upon which structural ambiguity ratings were made were the 45 inkblots comprising Form A of the Holtzman inkblot Test (HIT) and were in the usual card form.

Procedure. All ratings were performed individually. Initially each of the Ss was presented with a set of the HIT blots (al-

ways in the normal sequence) and instructed that the task before them was to rate each of the 45 blots on the dimension of ambiguity. This was to be done by placing each of the blots in one of five categories ranging from "very low ambiguity" at one extreme to "very high ambiguity" at the other. Thus, the blots were essentially rated on a five-point scale.

The instructions defined ambiguity for the rater as follows:

"Degree of ambiguity is primarily related to the ease with which articulate stable percepts are elicited from areas of the blot set off by the basic qualities of form, color and shading."

Ss were instructed that blots which lent themselves easily to the formation of such percepts should be placed in one of the low ambiguous categories, while those that did not elicit such responses, or did so only after considerable effort, should be categorized higher on the ambiguity dimension. The instructions made clear that the rater should not limit himself to judging ambiguity exclusively on his perception of the blot as a whole, but that outstanding large details were also to be considered as an adequate basis for making judgment.

Ss were further instructed that after classifying the blots into five categories, corresponding to the five points on the ambiguity scale, they were to then examine each of the blots placed within a category to determine if all the blots in that category seemed to reflect a similar degree of ambiguity. If they were not judged approximately equivalent, those blots which did not seem equivalent were to be reassigned to a more appropriate ambiguity category.

Initially, the instructions summarized above were read to the Ss. A printed copy was also left with them for reference, and the experimenter was always available in an adjacent room to answer questions.

Interpretive Ambiguity Measurement

Subjects. The Ss involved in the measurement of interpretive ambiguity were four samples of 100 Ss each from the countries of Mexico, Germany, China (Hong Kong), and the United States. All

were undergraduate students in their native countries and each sample was composed of approximately equal numbers of males and females.

The measure of interpretive ambiguity.

The measure chosen to reflect interpretive ambiguity in the present research was the *total number of different words* given by each of the four samples in response to each of the 45 blots in the HIT. Every distinct word was counted separately, with no attempt being made to judge or combine synonyms. Singulars and plurals were also treated separately since it was felt that different interpretations could be implied by the two forms of a particular word.

Procedure. The responses to the HIT, from which the interpretive ambiguity measures were tabulated, were collected in the various countries involved by resident psychologists who had volunteered their services for the NIMH Grant Study. The test was administered in group form (Swartz & Holtzman, 1963) after each resident investigator had translated the instructions into the native language of the Ss. Investigators were instructed to adhere as closely as possible to the original English instructions.

The Ss were tested in groups ranging in size from 20 to 100, each of the 45 slides being projected for 60 seconds on a standard white screen. Ss were instructed to limit their responses to six words or less³ and to indicate which portion of the blot (if not the whole) the response was being made to. Once the protocols were completed they were translated into English by the resident investigator and returned to this country for scoring.

The computation of the total number of different words given in response to each of the 45 blots was accomplished by employing several of the options of the Group HIT Scoring Program, a computerized system designed to score HIT protocols. A full exposition of the Group HIT Scoring Program has been presented

by Gorham, (1967). At the time the present data was collected the system employed a dictionary of 6,200 words, derived from the responses of 1,200 normal subjects, each keyed with scoring weights for 17 HIT variables. The program also prints out the total number of words used, as well as the number of unique words used (words not included in the dictionary) and lists all the words with their respective frequencies of occurrence. By employing several of the program options, any sample of Ss' responses may be treated as a single protocol. Summed HIT scores as well as summed frequencies for all the words given in response by the total sample may be obtained.

After converting the original protocols to data cards they were scored by the Group HIT Scoring Program and the total number of different words for each blot was realized by employing the options mentioned above. In this manner, a measure of interpretive ambiguity was obtained for each of the blots in the HIT from each of the four cultural samples.

Results

Mean structural ambiguity ratings were calculated for each group of students and the sample of psychologists on each of the 45 blots in the Holtzman test. The ratings of the four groups of student Ss were also summed across samples and an average student rating, based on the responses of 40 Ss, was also calculated. These mean ratings are presented in Table 1.

The mean ratings of the five groups, as well as the pooled student average, were then correlated and the results appear in Table 2.

As the results in Tables 1 & 2 indicate, a high degree of agreement was observed among the structural ambiguity ratings of the four student samples. All of the r 's were significant, the majority falling between .70 and .80. High agreement was also observed between the ratings of the student samples and those of the professional psychologists. The correlation between the psychologists' ratings and the average pooled student ratings was very high, ($r=.90$) and even when taken sep-

³ The six word limit on responses was a restraint in the original Group HIT Scoring Program. A new version of the program has been subsequently developed, not subject to this limitation.

Table 1
Mean Structural Ambiguity Ratings of the Holtzman Inkblots
Made by Four Student Samples and a Sample of American Psychologists

Blot Number	Sample					
	American Psychologists	Student Average	American Students	Mexican Students	Chinese Students	German Students
1	2.20	2.38	3.00	2.30	2.10	2.10
2	1.40	1.35	1.20	1.60	1.30	1.30
3	3.60	3.40	3.80	3.80	3.00	3.00
4	1.95	1.53	1.40	1.80	1.40	1.50
5	4.60	4.38	4.20	4.40	4.50	4.40
6	3.70	3.23	2.40	3.20	3.80	3.50
7	2.65	3.03	2.80	3.00	3.10	3.20
8	3.15	2.85	3.10	3.90	2.40	2.00
9	3.20	3.38	3.30	3.50	3.80	2.90
10	3.55	3.08	2.50	2.90	4.00	2.90
11	2.60	3.15	3.60	3.20	2.90	2.90
12	1.45	1.58	1.20	1.90	1.40	1.80
13	4.80	4.38	4.40	4.10	4.60	4.40
14	3.25	3.25	2.60	2.90	3.90	3.60
15	2.90	3.30	3.30	3.20	2.70	4.00
16	3.70	3.23	2.90	3.10	3.00	3.90
17	3.15	3.10	3.40	2.80	3.70	2.50
18	3.30	3.43	3.90	2.80	3.30	3.70
19	1.45	1.20	1.10	1.20	1.30	1.20
20	3.60	3.35	3.40	3.00	2.90	4.10
21	2.85	2.53	2.50	2.90	2.80	1.90
22	2.90	3.23	3.40	3.20	3.80	2.50
23	3.35	4.08	4.20	3.90	4.20	4.00
24	4.30	4.48	4.50	4.60	4.30	4.50
25	1.25	1.25	1.10	1.50	1.30	1.10
26	3.65	3.68	3.40	3.10	3.80	4.40
27	2.10	2.48	2.70	2.70	2.40	2.10
28	4.15	4.08	3.80	4.30	4.00	4.40
29	3.70	3.50	4.00	2.90	2.90	4.20
30	4.10	2.98	3.10	3.30	3.40	2.10
31	3.45	3.53	4.20	2.80	3.50	3.60
32	3.55	3.35	3.70	3.40	3.30	3.00
33	3.90	3.35	3.40	2.90	3.70	3.40
34	1.90	1.65	1.60	1.50	1.70	1.80
35	3.65	3.88	4.00	4.30	3.80	3.40
36	3.10	3.15	3.40	3.20	2.90	3.10
37	3.35	3.28	3.60	3.00	3.00	3.50
38	4.25	3.38	3.80	3.10	2.50	4.10
39	3.00	2.68	2.50	3.30	2.70	2.20
40	3.15	3.25	4.20	2.80	2.60	3.40
41	2.10	2.38	1.70	2.70	3.40	1.70
42	3.15	2.60	2.80	3.30	2.10	2.20
43	3.45	4.20	4.10	4.20	4.50	4.00
44	3.50	3.38	3.60	3.80	3.60	2.50
45	2.50	2.88	1.90	3.20	3.40	3.00

arately, each of the student samples correlated about .80 with the professionals. Correlations of the four student samples with the average pooled ratings were highly consistent, showing little variation among the four groups.

On the measure of interpretive ambiguity, once the total number of different words given in response to each of the 45 Holtzman blots was tabulated for each of the four samples of 100 Ss, the four samples were correlated on this measure. These results appear in Table 3. Correlations among the four samples were all in a positive direction and of about equal magnitude. While the extent of agreement on the measure was only moderate compared to the high agreement demonstrated among the Ss rating structural ambiguity, all of the *rs* were well beyond the level necessary to attain significance.

In order to establish the nature and degree of relationship between the two measures of ambiguity, the mean structural

ambiguity ratings and the measure of interpretive ambiguity were correlated for each of the four cultures represented. The pooled average structural ratings and the pooled average interpretive measure were also correlated. These correlations appear in Table 4.

In general, the results indicate a negative correlation between the two measures, although there was variation among the samples in terms of degree of relationship. Significant correlations were evident in the U.S. and Mexican samples, as well as between the pooled averages. The relationship in the German and Chinese samples, while of an inverse nature, was very slight.

In order to examine the possibility of a non-linear relationship existing between the two measures, scatter plots of each correlation were generated using the resident plotter of a Univac 1108 system. No evidence of significant curvilinearity was observed in any of the samples.

Table 2
Intercorrelations of Mean Structural Ambiguity Ratings of the
Holtzman Inkblots Made by Four Students Samples
and a Sample of American Psychologists

Sample		1	2	3	4	5	6
American Psychologists	1	1.00	.82	.81	.78	.81	.90
American Students	2		1.00	.78	.70	.79	.91
Mexican Students	3			1.00	.80	.67	.89
Chinese Students	4				1.00	.71	.89
German Students	5					1.00	.89
Student Average	6						1.00

Discussion

The results presented in the previous section clearly indicate a consistently high level of agreement among the raters on the structural measure of ambiguity. Neither the differences in the cultural backgrounds of the student samples, nor the specialized training of the sample of professional psychologists noticeably attenuated the consistency of the judges' ratings. These findings suggest that ambiguity, when defined in a structural sense, specifically as *ease of response elicitation*, is a concept which is held in a highly consonant manner interculturally and may approach being a culture-free concept. It follows also from the above that the ease or difficulty of response elicitation of the specific Holtzman blots is consistent across cultures as well as within them.

Correlations of the measure of *interpretive ambiguity* among the four cultural groups indicated a moderate, but significant, level of agreement among them. The r 's ranged from .44 to .55, all of them being in a positive direction. While this degree of agreement does suggest a certain amount of commonality in this concept

among the various cultures, a sizeable portion of the variation on this measure remains undetermined. Certainly some portion of this unexplained variance was due to intracultural influences, specific to each of the groups, which functioned in a manner to reduce the agreement among the samples. The influences of several other factors may have also operated to attenuate agreement on this measure.

The six-word response limit was initially imposed because of limitations inherent in the Group HIT Scoring Program. This restraint obviously served to truncate the responses of the individuals comprising the samples, and thereby served to restrict the range of the total number of different words given in response to the blots. Even though recent research, utilizing a modified program, has indicated that only a small percentage of college students respond with more than six words, there is still reason to believe that this influence acted to reduce the extent of agreement among the groups.

A second factor which may have acted to restrict the range of responses, and thereby affect agreement among the samples, was the set of the individuals per-

Table 3
Intercorrelations of a Measure of Interpretive Ambiguity Among
Four Student Samples with Diverse Cultural Backgrounds
Generated from Response to the Holtzman Inkblots

Sample		1	2	3	4
American Students	1	1.00	.51	.55	.51
Mexican Students	2		1.00	.44	.52
Chinese Students	3			1.00	.51
German Students	4				1.00

Table 4
Intercorrelations of Measures of Structural vs. Interpretive
Ambiguity among Four Cultural Groups and their Pooled Averages

Sample	r	P
American Structural vs. Interpretive	-.37	.01
Mexican Structural vs. Interpretive	-.41	.01
Chinese Structural vs. Interpretive	-.01	NS
German Structural vs. Interpretive	-.12	NS
Average Structural vs. Interpretive	-.35	.01

forming the translations. No specific instructions regarding literality of translation were issued to the resident investigators. Since all of them were made aware of the six word limit, it is possible that a self-imposed set to "keep the responses simple" may have been induced inadvertently. If this were the case, there may have been a tendency on the part of the investigators to pool unique response words under some handy superordinate heading, and to simplify some of the more elegant, idiosyncratic responses.

We cannot, at this time, evaluate the extent to which either of these influences affected the results on the interpretive measure. It should be noted, however, that the influence of both factors would be such as to produce an error of a conservative nature, and that, therefore, the extent of agreement among the populations from which these samples were drawn is probably at least as high as has been demonstrated here.

Initial comparisons demonstrated substantial agreement among the cultural groups on the ratings of structural am-

biguity, and moderate agreement on the interpretive measure. Of principal interest, however, was the nature and degree of relationship between these two measures. In general, the results indicated the existence of an inverse relationship between structural and interpretive ambiguity. Those blots rated low on structural ambiguity tended to receive high scores on the interpretive measure, and vice versa. For the most part, blots judged low on the structural measure tended to elicit responses which were expanded and more detailed, while blots rated higher on the structural measure tended to elicit responses which were somewhat restricted and general in nature. Stimuli in the former category tended to evoke responses involving specific human or animal figures, with commentary on the cognitive, emotional, or attitudinal states of the figures perceived, as well as the actions they might be engaged in. Responses to blots in the latter group were more often unembellished, (e.g., rain, fossils, ants, etc.), contained more anatomical references, and were more general in nature, (e.g., water-

colors, flowers, figures, etc.). In all four samples correlations among the two measures were negative. Little relationship was apparent in either the Chinese or the German samples, but both the U.S. and the Mexican samples evidenced correlations that were quite significant. The coefficient between the pooled averages of the two measures was also large enough to be significant at the .01 level. Possibly, this latter coefficient is a better indicator of the relationship in general, since influences specific to the samples or to the investigators doing the translations tend to be minimized, or averaged out.

Some evidence already exists (Derogatis, 1965) suggesting an inverse relationship between the two concepts. In that study, factor analyses were performed on the co-occurrence matrices of words given in response to blots rated "very high" and "very low" in structural ambiguity. The results indicated that factors in the former case were fewer, vague, and more simplistic in nature; while factors emerging from analysis of the low ambiguous blots were more elaborate and detailed and evidenced greater interpretive variability.

The results of the present study cannot be treated entirely unequivocally, due to the inherent difficulties involved in maintaining equivalence of meaning in translations from one language to another, and the previously mentioned restrictions on the range of the interpretive measure of ambiguity. However, the evidence seems to indicate, at least within the range of the dimension represented by inkblots, that variability in interpretation depends to

some extent upon a certain degree of resident structure in the stimulus. Or, as Arnheim (1951) puts it, "... People do not offer much comment on nothing."

REFERENCES

- Arnheim, R. Perceptual and aesthetic aspects of the movement response. *Journal of Personality*, 1951, 19, 265-281.
- Bijou, S. W. & Kenny, D. T. The ambiguity values of the TAT cards. *Journal of Consulting Psychology*, 1951, 15, 203-209.
- Derogatis, L. R. Commonality in perception among cultures as a function of degree of stimulus ambiguity: A cross-cultural study with the Holtzman Inkblots. Unpublished doctoral dissertation. Catholic University, Washington, D.C., 1965.
- Gorham, D. R. Validity and reliability studies of a computer based scoring system for inkblot responses. *Journal of Consulting Psychology*, 1967, 31, 65-70.
- Luchins, A. S. The stimulus field in social psychology. *Psychological Review*, 1950, 57, 27-30.
- Murstein, B. I. The relationship of stimulus ambiguity on the TAT to the productivity of themes. *Journal of Consulting Psychology*, 1958, 22, 348.
- Murstein, B. I. The measurement of ambiguity for thematic cards. *Journal of Projective Techniques*, 1960, 24, 419-423.
- Murstein, B. I. A normative study of TAT ambiguity. *Journal of Projective Techniques & Personality Assessment*, 1964, 28, 210-218.
- Swartz, J. D., & Holtzman W., Group method of administration for the Holtzman Inkblot Technique, 1963, *Journal of Clinical Psychology*, 19, 4, 433-441.

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The Development of a Female Form of The Blacky Pictures¹

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Summary: Some current controversy about the Blacky Pictures has been focused on Ss' perception of the sex of the dog Blacky. A second form of the Blacky Pictures using a cat as the central figure was developed. A test-retest procedure was used with 53 fourteen-year-old public school females.

Ss' numerical scores and preferences of "Like" or "Dislike" for the 11 cartoons did not change appreciably whether the same or a different form was used in retesting. The scores of Ss receiving the cat form at the first administration and the scores of subjects receiving the dog form at the first administration differed significantly on six out of 30 scoring dimensions.

In the 18 years since its inception the Blacky Pictures (Blum, 1949) have been used to explore differences in a variety of populations. Reliability studies have been conducted and changes have been made in the original scoring system. In recent years attention has been focused on the perception of the sex of the dog Blacky, raising the question of the ease of identification with Blacky, particularly by females. Although Blum found the name "Blacky" to be taken as a female name as often as a male name, Wolfson and Wolff (1956) found both males and females saw the name "Blacky" as male.

Factor analyzing Blum's original published data, Neuman and Salvatore (1958) arrived at six factors which they felt corresponded to the psychosexual states of orality, anality, phallic, oedipal, latency and genitality when administered to males but got contradictory results when female responses were analyzed. They suggested two explanations for this discrepancy. First, Freudian theory, having been constructed within a masculine framework, might be difficult to apply to female subjects. Second, dogs might convey such masculine characteristics, i.e., aggressiveness, that females would find it difficult to identify with the dog Blacky and might find it easier to identify with a cat.

Using a factor analytic technique probably not available to Neuman and Salvatore at the time of their study, Robinson and Hendrix (1966) arrived at factors for females corresponding to the oral, anal, phallic and genital levels and suggested the Blacky might be more congruent with psychoanalytic theory and female psychosexual development than previously thought.

Rossi and Solomon (1961) found female college students rated the word cat as more feminine than the words dog and Blacky, significant at the .001 level. Stricker (1963) had each card rated on 21 semantic differential scales by college males and females and raised the question of whether females might not be identifying with the mother rather than with Blacky.

Dean (1959) suggested not only the use of a cat family but the use of a cat with a different name, such as Whitey. King and King (1964) showed the frontispiece of the Adventures of Whitey and the frontispiece of the Adventures of Blacky to junior and senior high school students of both sexes, asking them to write a story about the family shown. Their cat, like the dog Blacky, was "neutral" in appearance. The measure of identification employed was whether or not the subject referred to the main character as being of the same sex as the subject. Over 95 per cent of both male and female subjects referred to Blacky and Whitey as being male. King and King suggested the problem might not be one of identification so much as it was one of semantics; that is, in our culture when the sex of a referent is unspecified, the masculine pronoun is used. Such use of the masculine pronoun may be

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true and accurate in the King and King study, since the animals used were not identified as to sex and were "neutral" in appearance. When the Blacky is administered correctly, however, the animal is identified by the examiner to be of the same sex as the S; and the original decision is not left up to the S.

The survey of the literature having raised questions about the effect of using a cat rather than a dog as the central character in the Blacky Pictures, it was decided to develop a set of cat pictures more identical to the original set than those developed for the King and King study.

Preliminary Studies

As a first step an attempt was made to get a masculinity-femininity rating of the name Blacky, as well as other names which might be appropriate for renaming the new form. A list of 66 names ending in the letter "y" was compiled. It contained 43 female names, 10 male names and 13 names which were felt to be either male or female names, such as Billy, Jessy, Jacky and Terry. The original name of Blacky and that of Whitey, the name proposed by Dean, were also included in the third category. Eighteen students (six males, 12 females) in a university graduate class were asked to rate the names on a five-point scale: 1 feminine; 2 tending toward feminine; 3 could be feminine or masculine; 4 tending toward masculine; 5 masculine.

The results indicated those names classed as masculine by the investigator were also rated nearer the masculine end of the scale by the Ss. Those 13 names about which some doubt was felt were similarly rated by the Ss. One of the names, Sandy, was rated 2.5 (more feminine than masculine). Of the remainder, eight were rated as being in the 3.0-3.9 range and four were rated in the 4.0-4.9 range. Blacky was given a 4.0 or masculine rating by both males and females. Whitey was rated as 3.8 by females, 4.2 by males, with a total mean rating of 3.9.

With the exception of the name Blacky, those names with a total mean rating of 2.0 or more were eliminated

from the list, names which might be more appropriate for a pet were added, and a second list containing 59 names ending in "y" was compiled. The list was given to 21 students (19 females, two males) in a university class in elementary education. Ss were told they were being asked to help choose a name for a drawing of a black, female cat and were asked to rate the names on a five-point scale indicating appropriateness or inappropriateness: 1 appropriate; 2 slightly appropriate; 3 neutral, neither appropriate nor inappropriate; 4 slightly inappropriate; 5 inappropriate. Seven names had a mean rating under 3.0. They were Inky (1.8), Smoky (1.95), Slinky (2.2), Blacky (2.3), Pixy (2.7), Kitty (2.9), and Cindy (2.9). Blacky, although given a 4.0 rating on the masculine-feminine scale, was rated as 2.3 or slightly appropriate.

Thirty-three college students (13 males, 20 females) were then asked to state whether a cat named Inky, Slinky, Smoky or Blacky would be male, female, or unable to tell by name. Table 1 shows the names Inky, Smoky and Blacky apparently do not carry the connotation of female sexuality, but are regarded as either not defining sex or as male. Although Slinky gives little clue, it is more frequently perceived as female.

At this point an artist was employed to complete some ink sketches of a "black female cat" in the same settings as the original Blacky Pictures. Instead the artist tried to portray a cat depicting

Table 1
Responses of College Students
to the Sexuality of a Cat with
One of Four Names

Name	Male	Female	Unable to tell by name
Inky	31%	6%	63%
Slinky	9%	42%	49%
Smoky	45%	3%	52%
Blacky	55%	0%	45%

the sexual "neutrality" she thought the original Blacky Pictures depicted.

Thirty-one college students (11 males and 20 females) then viewed the sketches of the black cat. They were asked to rate the names Inky, Smoky, Slinky & Blacky on the five-point appropriateness scale used earlier as to their appropriateness for a name for the cat pictured. Inky was regarded by the females as the most appropriate (1.0); Blacky was regarded by the males as the most appropriate (1.4) and by females as somewhat appropriate (1.8). When male and female responses were combined, Blacky received a mean of 1.7 and Inky a mean of 2.0, both nearer to "slightly appropriate" than any other position on the scale. Slinky received a mean of 3.1 and Smoky 3.7.

The same subjects were asked to guess whether the cat pictured was male, female, or could be either. In all cases the majority saw the pictured cat as male (65%), although some stated it could be either (35%). No one saw the cat pictured as definitely female. It also appeared that for the specific cat pictured Inky and Blacky were the most appropriate names. The findings suggested the substitution of a cat might not necessarily facilitate feminine identification and corroborated the findings of King and King (1964) and Robinson and Hendrix (1966).

The artist next redrew the sketches attempting to make the cat more feminine by adding a bow and long eyelashes and to match the sketches to the original with respect to placement, size and background details. The placement of the cat figures was determined by tracing over the original on quadrille paper. The background was also traced and reproduced on the cat pictures, except on Cartoon III where baskets were substituted for dog houses.

The size of the pictures was evaluated by going over the quadrille tracings of the original pictures with a polar planimeter. The cat pictures were also traced onto quadrille paper and a planimeter used to measure them. No cat picture varied more than .19 square inches from the original. In addition, the size of each cat picture was compared with its cor-

responding dog picture and the difference computed in percentage. An arbitrary two percent was chosen as the maximum variation to be allowed; and any picture exceeding that was returned to the artist for change. In no instance did the final difference reach more than 1.6 percent variation.

When the pictures had been completed, Cartoon VII was shown to 55 junior high school students (33 males, 22 females). The change in age of population was made because continuing studies were anticipated which would use a junior high school population. They were asked to rate the names Inky, Smoky, Slinky and Blacky on the five-point appropriateness scale for a name for the cat pictured. Blacky was regarded by the females as appropriate (1.3); Inky was regarded as slightly appropriate (2.3); Smoky (3.3); Slinky (3.2) were regarded as neither appropriate nor inappropriate. The males regarded Blacky (2.0) and Inky (2.2) as only slightly appropriate, while Slinky (3.5) and Smoky (3.3) were regarded as neutral. When male and female responses were combined, Blacky received the lowest mean rating (1.7), while the other three names received mean ratings which placed them in the slightly appropriate or neutral ranges (Inky, 2.3; Smoky 3.3; Slinky, 3.4).

The Ss were also asked to guess whether the cat pictured was male, female or could be either. In all cases the majority saw the cat pictured as female (80%). Nine percent saw it as male and 11 percent stated it could be either. It appeared that for the specific cat pictured, which was perceived as predominantly female, Inky and Blacky were appropriate names. Interestingly enough, these were the exact results obtained when the cat pictured was perceived as predominantly male. It was therefore decided to use the original name Blacky for the cat pictures to control more variables.

Both the commercial copy of the dog form of the Blacky and the new ink drawings of a cat were reproduced by the Xerox process to avoid using two forms not identical in art presentation.

Since the Xerox process tends to pick up only lines, it was then necessary to darken shaded areas of the pictures with a felt tip pen to make them appear black.

Reliability Studies

Fifty-three 14-year-old public school females received the completed Blacky Pictures. Fifteen received the dog form and six weeks later the dog form again. Thirteen received the cat form and six weeks later the cat form again. Thirteen received the cat form and six weeks later the dog form. Twelve received the dog form and six weeks later the cat form.

The Blacky Pictures were shown by opaque projector and all items were read to the Ss. The tests were scored according to Blum's revised scoring guide (Blum, 1962), resulting in a numerical score for each of 30 dimensions.

Since Blum's scoring system was arrived at by the use of responses of a male population, some changes were necessary in the scoring system. It could be argued that it would have been better to use Blum's earlier scoring system (Blum, 1951) since it provided directions for scoring both male and female responses. However, the earlier system was also developed from male responses, rather arbitrarily changed where pertinent for females. In addition, numerical scores provide more detailed information than the earlier threefold categorization of strong, moderate, and weak or absent. Accordingly, the following changes were made:

(a) *Cartoon VI—Castration Anxiety*: No change was made in scoring. It should be noted, however, that this card traditionally measures Penis Envy for females rather than Castration Anxiety. Inquiry questions are therefore different for males and females. The inquiry questions customarily used for males were retained, the rationale being that responses to the inquiry questions would provide comparative data with males (to be gathered at a later date), whereas to use the questions of the female inquiry would not.

(b) *Cartoon X—Ego Ideal*: Since the scoring system pertained to males, the

cartoon had to do with positive and negative perceptions of the father. To get some idea of female ego ideal, the perception is the mother. Male Ss are shown a male animal and female Ss are shown a female animal. In changing the scoring, then, the word "mother" was substituted in the female form where the word "father" was used in the male form. The questions remained identical in all other respects. The change was true of questions for both dimensions pertaining to Cartoon X: Overtly Positive Perception of Self and Father, which became "mother" for females, and Negative Perception of Self and Father, which became "mother" for females. The same kind of change was made in the 1951 scoring system to permit female responses to be scored.

(c) *Cartoon XI—Love Object*: Because the original scoring system pertained to males, inquiry questions for the first dimension were concerned with the possibility of a mother-surrogate as a love object. Male Ss are shown a female animal; female Ss are shown a male animal. Hence, the word "father" was substituted for "mother" in the inquiry questions for the dimension Mother-Surrogate as Love Object, which became "Father-Surrogate" for females, as well as where necessary on the other dimensions for this cartoon. The second dimension is Heterosexual Fantasy. Item Six of the Inquiry asks whether Blacky would like to be like the figure shown on the cartoon and why. In the scoring system for males the S receives a point if he responds to the effect that Blacky doesn't like effeminate boys. The scoring criterion for this was changed to coincide with female responses, i.e., female Ss received a point if they responded that Blacky didn't like masculine girls.

Results

Numerical scores for the 30 dimensions ranged from 0 to 8, with no dimension receiving a score higher than 8. Twenty of the 59 tests administered at the first testing were randomly selected to be rescored a month later as a check on scoring consistency. The percentage

of agreement between the two scorings was 99.94%, there being 37 points out of a possible 600 which differed in the second scoring.

The scores were then divided into three categories: low 0 through 2, moderate 3 through 5, and high 6 through 8. For each of the four population groups a comparison was made between the *S*'s first and second test responses to determine how many scores remained in the same category and how many changed with the second testing. The results appear in Table 2 and show that the change resulting from retesting with a second form is slightly less than the change resulting when the same form is used a second time, although the differences are negligible.

The preference of "Like" or "Dislike" for the two administrations of the Blacky were compared for each of the four groups. The analysis was similar to one performed by Granick and Schefflen (1958) with elementary school children. Table 3 shows the extent to which subjects placed the individual cards in the same category for the two test administrations. Marked consistency is evident even when a different form of the Blacky was administered the second time. Changing the form from one administration to the next does not seem to appreciably change the *S*'s preferences for a given cartoon any more than retesting with the same form.

As a final comparison *t*-tests were run on the means of the 30 scoring dimen-

sions for the groups receiving the cat form and the dog form. Table 4 shows the results. The dimensions of Exploitation and Evasion of Identification Issue were significantly different at the .01 level of confidence. Four dimensions were significantly different at the .05 level of confidence. These were Supply Seeking, Disguised Oedipal Involvement, Overwhelming Castration Conflict, and Negative Perception of Self and Mother.

Discussion

Although the mean scores of *S*s responding to the cat form of the Blacky Pictures showed higher Evasion of Identification on Cartoon VII, the difference can be attributed to the fact that there were more dog form responses where the subject answered "Mother or Father" to the inquiry questions instead of answering either "mother" or "father." According to Blum's scoring guide, the dual responses "Mother and Father" and "Mother or Father" are not scored. The responses of the group receiving the dog form were therefore lower by omission. There was actually only one cat form response of "Mother and Father" while there were 15 such responses for the group receiving the dog form. This is what would be expected if the cat pictures facilitate a clearer identification rather than a mixed identification.

With such a possibility in mind we can now look at the differences in the other dimensions. Female *S*s responding to the cat pictures expressed more need to gain the approval of others as well as a passive, compliant approach to frustration, as measured by the Supply Seeking dimension. Their responses on the Exploitation dimension also indicated a stronger need to express aggressive impulses, possibly because there are limited outlets for expressing aggression if one adopts compliant, approval-seeking behavior. The females responding to the cat pictures indicated less Negative Perception of Self and Mother as well as less Overwhelming Castration Conflict, both of which would be in accordance with a more feminine involvement or identification with the cat pic-

Table 2

Percentages of Factors Remaining in the Same Category for Two Test Administrations of the Blacky Pictures

Form Used for First and Second Administration	Percent of Factors Remaining in the Same Category
Dog-Dog (N=15)	80%
Dog-Cat (N=12)	81%
Cat-Dog (N=13)	82%
Cat-Cat (N=13)	78%

Table 3
Consistency of Likes and Dislikes
of Blacky Cards for Two Administrations
to the Same Subjects

Card No.	Same Pref. C-D Grp. ^a (N=13)	p*	Same Pref. D-C Grp. ^a (N=12)	p*	Same Pref. C-C Grp. ^a (N=13)	p*	Same Pref. D-D Grp. ^a (N=15)	p*
1	11	.001	9	.001	7	.001	10	.001
2	10	.001	5	.001	10	.001	12	.001
3	10	.001	12	.001	13	.001	13	.001
4	11	.001	9	.001	11	.001	13	.001
5	13	.001	12	.001	13	.001	12	.001
6	9	.001	9	.001	8	.001	9	.001
7	13	.001	10	.001	13	.001	11	.001
8	7	.001	9	.001	12	.001	11	.001
9	9	.001	9	.001	10	.001	13	.001
10	13	.001	8	.001	13	.001	15	.001
11	11	.001	9	.001	13	.001	14	.001

*Binomial

^aTest used at first, then second administration. C=Cat Form, D=Dog Form.

tures. Female Ss responding to the cat pictures also demonstrated less oedipal defensiveness as measured by a lower Disguised Oedipal Involvement score.

Although it appears the use of a cat figure may make a difference in the way Ss respond to the cartoons, it is not clear at this point whether the change can be attributed to a difference in identification, to the cat being seen as less aggressive, or to some other differences in the stimulus properties of the two forms. It is possible that certain scenes or acts might be viewed as being more appropriate, or less threatening when enacted by one animal than by another.

The present study should be regarded as an exploratory effort in developing a new form of the Blacky Pictures and in acquiring preliminary information thereon. Explanations are put forth as highly tentative in view of the limited population used and the lack of norms or comparative responses for adolescent populations. Additional research is needed to determine the similarity in

content and feeling between the two forms, and to gain detailed information on the use of the new scoring system with females.

REFERENCES

- Blum, G. S. A study of the psychoanalytic theory of psychosexual development. *Genetic Psychological Monograph*, 1949, 39, 3-99.
- Blum, G. S. Revised Scoring System for Research Use of the Blacky Pictures, 1951, Mimeo.
- Blum, G. S. A guide for research use of the Blacky Pictures. *Journal of Projective Techniques*, 1962, 26, 3-29.
- Dean, S. I. A note on female Blacky protocols. *Journal of Projective Techniques*, 1959, 23, 417.
- Granick, S. & Schefflen, Norma. Approaches to reliability of projective tests with special reference to the Blacky Pictures. *Journal of Consulting Psychology*, 1958, 22, 137-141.
- King, F. W. & King, D. C. The projective assessment of the female's sexual identification with special reference to the Blacky Pictures. *Journal of Projective Techniques & Personality Assessment*, 1964, 28, 293-299.
- Neuman, G. C. & Salvatore, J. C. The Blacky Test and psychoanalytic theory: a factor-analytic approach to validity. *Journal of Projective Techniques*, 1958, 22, 427-431.

Table 4
Differences in 30 Dimensions as Indicated by *t* Tests
When Two Forms of the Blacky Pictures Were Used

Dimension	Mean Dog Grp.	Mean Cat Grp.	Value of <i>t</i>	Level of Sig.
Oral Craving	1.23	1.74	1.46	
Oral Rejection	.77	.78	.06	
Sugar Coating	1.43	1.95	1.93	
Playfulness	1.50	1.88	1.26	
Supply-Seeking	1.23	1.81	2.29	.05
Resentment Over Oral Deprivation	.63	.68	.29	
Exploitation	1.03	1.88	2.66	.01
Choosing Obvious Neutral Responses	3.17	3.26	.27	
Attempted Denial of Anal Preoccupation	.57	.57	0	
Undisguised Oedipal Involvement	.63	.64	.08	
Disguised Oedipal Involvement	2.90	2.22	2.00	.05
Fear of Punishment for Masturbation	.83	.91	.28	
Concern Over Sexual Maturation	.97	1.40	1.79	
Denial of Masturbation Guilt	1.37	1.40	.07	
Overwhelming Castration Conflict	3.23	2.43	2.18	.05
Minimizing Castration Anxiety	1.03	1.40	1.28	
Father as Preferred Identification Object	2.22	2.50	.72	
Mother as Preferred Identification Object	3.23	3.60	.88	
Evasion of Identification Issue	.63	1.53	3.27	.01
Overt Hostility toward Sibling and Mother	1.50	.98	1.95	
Reaction Formation to Sibling Rivalry	1.63	1.67	.11	
Rejection i.: Favor of Sibling	2.80	2.78	.05	
Partial Denial of Guilt	.77	.71	.20	
Guilt-Ridden Hostility toward Sibling	3.03	2.64	1.08	
Qualification of Pervasive Guilt	.90	1.26	1.64	
Overtly Positive Perception of Self and Mother	2.30	2.55	.78	
Negative Perception of Self and Mother	1.77	1.12	2.57	.05
Father Surrogate as Love Object	1.70	1.33	1.06	
Heterosexual Fantasy	2.37	2.64	.70	
Narcissism	1.83	1.46	.86	

Robinson, Sandra A. and Hendrix, V. L. The Blacky Test and psychoanalytic theory: another factor-analytic approach to validity. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 597-603.

Rossi, A. M. & Solomon, P. A. further note on female Blacky protocols. *Journal of Projective Techniques*, 1961, 25, 339-340.

Stricker, G. Stimulus properties of the Blacky Pictures. *Journal of Projective Techniques and Personality Assessment*, 1963, 27, 244-247.

Wolfson, W. & Wolff, Frances. Sexual connotations of the name Blacky. *Journal of Projective Techniques*, 1956, 20, 347.

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Human Figure Drawing Indices of Sexual Maladjustment in Male Felons¹

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Summary: Two figure drawing characteristics (the presence of nudity and drawing the opposite-sex figure first) purported to reflect sexual maladjustment were shown to be positively related to each other in a population of 1,000 male felons. Adult felons drew the male figure first significantly less frequently than did normal adults, adolescent delinquents and most other populations studied, and thus apparently have greater problems in establishing a masculine sexual identification. The presence of nudity in figure drawings is less common in the adult felon group than in the adolescent delinquent group. There was no relationship between the variables of type of criminal offense, ethnic group, age, intelligence, MMPI *Mf* score and sex of the first-drawn figure.

Problem and Method

Machover (1949) has suggested that sexual maladjustment is indicated when, on the Draw-A-Person test (DAP), the opposite-sex figure is drawn first, and when the figures are underclothed. For a group of male felons, this study related sex of the first-drawn figure to the presence of nudity in the figure drawings, compared the frequency of sex of first-drawn figure with normal males and with adolescent delinquents, and related the variables of type of criminal offense, ethnic group, intelligence, age, and the MMPI Masculinity-Femininity Score to the sex of the first-drawn figure.

Ss were 1,000 male felons tested with the MMPI and the DAP within four weeks of admission to prison and who met the criteria of criminal offense (crimes against property, *N*=490; crimes against people, *N*=278; narcotics offenses, *N*=142; and sex crimes, *N*=90) and ethnic group (White, *N*=624; Mexican-American, *N*=150; Negro=226). Each figure drawing was placed in one of the following five categories: fully clothed, partially clothed, nude with genitals, nude without genitals, outline of figure only (neither nude or clothed).

Results

No relation occurred between the sex of the first-drawn figure and the variables of type of crime, ethnic group, age, intelligence and MMPI *Mf* score. The male figure was drawn first by 59.5% of the Ss. This is a significantly lower per-

centage ($p < .001$) than that reported (85%) for normal adult males (Gravitz, 1966) and juvenile delinquents (Fisher, 1961). There was a significant positive relationship between partial nudity ($p < .03$) and nudity with genitals ($p < .05$) in the female figures, and drawing the female figure first. A higher percentage ($p < .03$) of Ss drawing the female figure first (11.9%) gave some indication of nudity in one or both drawings than did those Ss drawing the male figure first (7.6%). Twice as many adolescent delinquents indicated some nudity in their figure drawings as did the adult felons (18% vs. 9%, $p < .001$).

Male felons drew the male figure first less frequently than did other groups as reported in the literature. A positive relationship occurred between indices of nudity and drawing the female figure first. Adult felons indicated less nudity in their drawings than did adolescent delinquents.

REFERENCES

- Fisher, G. M. Nudity in human figure drawings. *Journal of Clinical Psychology*, 1961, 17, 307-308.
 - Gravitz, M. A. Normal adult differentiation patterns on the figure drawing test. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 471-473.
 - Machover, Karen. *Personality projection in the drawing of the human figure*. Springfield, Ill.: Thomas, 1949.
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¹ An expanded report of this research may be obtained by writing to the author. Appreciation is expressed to the California Department of Corrections for allowing this study to be done.

Tactual Appeal and Aversion: Validation of Three Predictors

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Summary: A Touch Adjective List, the Tactual Reactivity Scale of the SPI, and the Taylor Manifest Anxiety Scale were administered to male and female college students in an effort to evaluate relative ability to predict affective response to tactile materials on the Tactile Experience Task. Mean scores for the sexes did not differ significantly. Intercorrelations among predictors were similar for both sexes, however MAS and TRS correlated significantly with TET for females only. In a multiple linear regression analysis, TAL was found to be a good predictor of TET for males and even better for females. MAS and TRS contributed substantially to the prediction of TET for females only.

Recent psychological literature has revealed increased interest in exploring the role of sensory preference in the development of personality and behavior patterns. In a review of the literature concerning drives, reinforcement and personality, Eisenberger (1966) concluded that "there is no experimental evidence at present to suggest that drives are more primary in behavioral development than sensory activities."

More attention is being paid to the role of tactile relationships in both the development and malfunction of personality in children and adults (Murphy, 1956; Casler, 1965; Schiebel, 1965; and Heider, 1966). At the same time, attempts have been made to develop new techniques for assessing affective response to tactile stimuli (Davis, 1964; Ekman, Hosman, & Lindstrom, 1965).

There is also a growing body of literature which suggests the existence of basic differences in the psychosexual makeup of males and females which tend to influence the interrelationships among many behavioral variables.

Although there are abundant examples of empirically validated sex differences in psychological functioning

and responsiveness (including those discussed by Anastasi, 1958; Johnson & Terman, 1940; Tyler, 1956; and McClelland, 1965), there have been few careful efforts to integrate these scattered findings in terms of any broad personality theory.

Several recent studies report sex differences in the relationship between anxiety and other variables. Mendelsohn and Griswold (1967) found anxiety scale *A* scores from the MMPI related to the use of incidental cues in problem solving for males. Wilson (1967) found a highly significant correlation between the social desirability ratings assigned to fear stimuli and the relative frequency with which males and females admitted being afraid of various stimuli. Fear of worms, for example was admitted almost exclusively by women, and was independently rated by judges as a very silly fear. May (1966) reported that female fantasy themes typically involved negative emotions or experiences ("deprivation") followed by positive emotions or experiences ("enhancement") and that the reverse typically occurred in males. He attempted to integrate his findings into a psychoanalytic framework and suggested that his results reflect differences in social role, including expectations regarding one's life cycle and the experience of one's own body which are distinctly sex-related.

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The purpose of the present study was three-fold: (a) To determine whether male and female college students differ in the admission of consciously felt anxiety and in alleged and actual affective responsiveness to tactile stimulation, (b) To determine which of three paper-pencil techniques best predicts affective responsiveness to tactile stimuli for both males and females, and (c) To determine whether predictability is enhanced equally for males and females by the addition of other predictor variables.

Our criterion or dependent variable was affective response to tactile stimuli. Independent variables were scores on three paper-pencil tests or tasks: the Taylor Manifest Anxiety Scale, the Tactual Reactivity Scale and the Touch Adjective List.

Method

Subjects

Subjects were 27 male and 27 female undergraduate students, 18 to 22 years of age, chosen at random from a large subject pool.

Materials

Materials consisted of paper and pencil tests and tasks, and objects to touch and feel. The tests, tasks and tactual materials were as follows:

1. *Touch Adjective List (TAL)*. A list of 75 adjectives was constructed. Each adjective describes a tactual sensation, the way an object or substance may feel when touched. The list included words such as sticky, greasy, soft, gummy, bristly, fuzzy, fluffy, etc. Some of these words may have typically positive or pleasant connotations (such as warm, lacy, silky, etc.). Others have more typically negative or unpleasant connotations (such as slimy, scabby, sooty, tarry, etc.). Still others may be more typically neutral or ambiguous, their relative level of pleasantness or unpleasantness being determined primarily by the context (such as quivering, lumpy, chalky, flaky, gritty, hairy, etc.). These words were to be rated on a 7-point scale of affective response from extremely unpleasant (rated 1) to extremely pleasant (rated 7). A relatively

high score on the adjective list indicates that the rater considered the adjectives, as a group, to be relatively pleasant, a low score, relatively unpleasant.

2. *Tactual Reactivity Scale (TRS)*. The Tactual Reactivity Scale (TRS) is one of 35 Guttman Scales from the Spiegel Personality Inventory (1965a, b). (The TRS is one of five scales from the SPI developed to describe persons in terms of sensory preference and aversion in all sense modalities. Some psychiatric groups have been found to have sensory profiles [SPI] which differ from those of normal groups.) It consists of five items which can be answered on a four-point scale from "definitely true" to "definitely false" with lower confidence points in between ("I think this is true, but I'm not quite sure" and "I think this is false, but I'm not quite sure"). In previous work it was found that the TRS meets the general criteria for an acceptable unidimensional Guttman scale (Spiegel, 1965b). In a study of scale stability in which the inventory was administered twice (with a test-retest interval of 2 weeks) to 49 students, a stability coefficient (Pearson r) of .79 was obtained for the TRS. TRS scores range from 5 to 20. On a sample of 128 male and 124 female college students 18 to 20 years of age, the mean score for males was 9.3 (S.D. = 2.9) and the mean score for females was 9.9 (S.D. = 3.1). The mean scores for males and females in our college sample did not differ significantly ($t = 1.47$; $p < .10$). High scores on the TRS are obtained by persons who acknowledge strong aversion to certain kinds of tactual associations with their environment. Low scores are obtained by persons who deny aversion to or indicate a liking for these tactual relationships. The content includes such things as holding "slippery or slimy" objects, walking barefoot in the mud, touching greasy or wet objects, sensitivity to fabrics and being disturbed by certain cutaneous sensations.

3. *Taylor Manifest Anxiety Scale (MAS)*. The MAS was chosen as a predictor variable in the present study for two reasons: (a) Previous work with the

sensory scales of the Spiegel Personality Inventory revealed a relatively low but consistent positive association to exist between anxiety level (using MAS) and expressed aversion to relatively intense sensory stimulation in all sensory modalities in psychiatric patients (using SPI sensory scale scores); and (b) Zuckerman, Kolin, Price, & Zoob (1964) reported a negative relationship to exist between sensation seeking and anxiety.

4. *Tactile Experience Task (TET)*. Materials for the Tactile Experience Task (TET) including the following twelve items which are listed in mean rank order from most unpleasant to most pleasant (for males and females combined): cold cream, a 2-inch square block covered with tape (adhesive on both sides), oil, coarse packing, smooth packing material, coral, a chocolate chip cookie, plastic grapes, a sponge, a hair-piece, feathers, and velvet. These materials were arranged on a table behind a curtain so that a *S* could touch a given object or substance when presented without seeing the materials. Scores on the TET may range from 12 to 84. A high score indicated that a *S* reported the materials to be generally very pleasant and a low score, very unpleasant. (In a previous study a product-moment correlation of $r = .34$ [$p < .10$] was found between TET and TRS scores of a com-

bined group of 27 male and female college students. There was a tendency of borderline significance for tactual aversion [reflected by TRS] to be accompanied by ratings of TET materials as unpleasant, and for denial of tactual disturbance to be accompanied by pleasant TET ratings.)

Procedure

When *Ss* arrived for their appointment they were naive about the aims and procedures of the experiment. They were given the various tests and tasks in the order in which the materials have been listed, as follows: TAL, TRS, MAS, and TET. After completing the paper and pencil tasks, *S* was instructed to reach through the curtain and feel the materials he would be presented. His task was merely to feel the material and then to rate it on a 7-point scale from unpleasant (1) to pleasant (7). *S* was told that he need not try to identify the object, but to concentrate on the tactual sensation. The scale points were left in front of *S* so he would not need to concentrate on remembering rating instructions. He announced his rating of each of the twelve materials after touching them, and *E* recorded the response.

Results

The mean "unpleasant-pleasant" rating of the TET materials for males

Table 1
Intercorrelations of TRS, MAS, TAL and TET for Males and Females

Variables	Males (N=27)			Females (N=27)		
	TAL	TRS	MAS	TAL	TRS	MAS
TRS	-.37*			-.48**		
MAS	.03	.44*		-.06	.32*	
TET	.57***	.02	.15	.68***	.37*	-.53***

Note: Significance levels are based on one-sided tests.

* $p < .05$

** $p < .01$

*** $p < .005$

was 45.1 (S.D. = 5.5) and for females, 44.1 (S.D. = 7.8). The difference between the means was not statistically significant ($t = 0.57$). Means and standard deviations for males and females on the independent variables are shown in Table 2. A t value of 1.33 was obtained for MAS ($p < .10$) which was of borderline statistical significance, the mean anxiety level being slightly higher for females than for males. None of the other t values approached statistical significance.

An analysis of the interrelationship among the variables was done for each group by computing product-moment coefficients of correlation between each pair of variables. The intercorrelation matrix is shown in Table 1. Intercorrelations among the independent variables are fairly similar in magnitude for male and female students. The correlation between TAL and TRS is slightly higher for females and the correlation between TRS and MAS is slightly higher for males. However, large sex differences occur with respect to the relationship between independent and dependent variables. The coefficients of correlation between TRS and TET and between MAS and TET are statistically significant for females only. Of the predictor variables, only TAL was highly correlated with TET for both sexes, indicating that persons who found the touch adjectives generally pleasant also found the tactile stimuli generally pleasant, and conversely, that persons who

found the touch adjectives generally unpleasant also found the tactile stimuli generally unpleasant.

In order to determine the extent to which the variables TAL, TRS and MAS make independent contributions to the prediction of affective response to tactile stimuli (TET), and to determine whether their combined use as predictors accounts for more of the variance in TET than is accounted for by TAL alone, multiple linear regression analyses were done for all combinations of predictor variables. A summary of the analyses for males and females for variables TAL, TRS, and MAS is shown in Table 2. The dependent variable in all these analyses is the criterion variable TET. Statistically significant t values were found for TAL and MAS for females, and for TAL for males.

The squared multiple correlation coefficient or coefficient of multiple determination (R^2) indicates the proportion of variance in TET which is accounted for by the set of predictor variables. However, since the multiple R is a biased estimate of the multiple correlation in the population, corrected values were computed to provide a more probable estimate of population values. Corrected coefficients of multiple correlation (cR) and multiple determination (cR^2) are shown in Table 3 in addition to the uncorrected R values for independent variables considered separately and in combination. The table shows how much was gained in ability to predict TET by

Table 2
Multiple Linear Regression Using TAL, TRS and MAS as Predictors of TET

Group	Variables	Mean	S.D.	Regression Coefficient	Standard Error of Regression Coefficient	t Value	Multiple R
Female N=27	TAL	264.9	32.5	0.17	0.03	5.63	0.85
	TRS	11.6	3.6	0.32	0.29	1.10	
	MAS	8.4	4.0	-1.04	0.23	-4.56	
Male N=27	TAL	264.4	33.5	0.10	0.03	3.46	0.60
	TRS	11.0	3.0	0.35	0.37	0.94	
	MAS	6.9	5.0	0.05	0.21	0.25	

Table 3
Corrected Coefficients of Multiple Correlation and Multiple Determination
for Independent Variables Considered Separately and in Combinations

Variables	Males (N - 27)			Females (N - 27)		
	R	cR	cR ²	R	cR	cR ²
TAL	.57	.58	.23	.68	.62**	.39
TRS	.02	.00	.00	.37	.17	.03
MAS	.15	.00	.00	.53	.43	.19
TAL, TRS	.60	.53*	.28	.68	.62**	.39
TAL, MAS	.58	.51	.26	.83	.81**	.23
TAL, TRS, MAS	.60	.53*	.28	.85	.82**	.68

Note. — $cR^2 = 1 - (1 - R^2) \left(\frac{N-1}{N-M} \right)$ where N = number of cases and m = number of variables correlated.

* $p < .05$

** $p < .01$

the addition of a variable to any single predictor or pair of predictors. A maximum *R* would be obtained when correlations with TET are large and when intercorrelations of TAL, TRS and MAS are small. A simple rule of thumb to determine whether a variable contributes appreciably to the prediction of the criterion is to observe the relative magnitudes of *cR*². Thus, for males, Table 3 shows that something may be gained by the addition of TRS to TAL (*cR*² = .28) in predicting PET, with nothing gained by the addition of MAS. For females, the best pair of predictors are TAL and MAS, yet something, although relatively little is gained by the addition of TRS. Whereas the three variables combined would account for an estimated 28% of the variance in TET for males in the population, they would account for an estimated 68% of the variance in TET for females. Thus, whether these variables are considered singly or in combination, they predict affective response to tactile stimuli on the TET much better for females than for males.

Discussion

The absence of an association between TAL and MAS for either males or fe-

males suggests that affective response to touch adjectives is independent of consciously admitted anxiety level.

The significant association between TRS and MAS for both groups suggests that level of admitted anxiety is related to strength of alleged aversion to sensory inputs on the TRS. It may be that the kind of person who admits disturbance on the MAS also tends to admit disturbance on the TRS, whereas, conversely, the kind of person who denies disturbance on the MAS also tends to deny disturbance by tactile stimuli on the TRS.

The significant negative correlation between TAL and TRS for both sexes suggests that expressed aversion to touch adjectives tends to be accompanied by alleged aversion to tactual stimuli on the TRS.

The findings of this study run counter to the popular belief that females are more squeamish than males about tactual relationships. However, this is true only to the degree that the TET samples representatively the general population of tactile sensations. It seems probable that the reputation for squeamishness in women is more related to the meanings associated with certain classes of objects than to the pleasing quality of

cutaneous sensations per se which may indeed be similar in males and females. We can only conclude that no evidence emerged from the present study to indicate that healthy young college men and women differ in affective response to tactile stimuli when no information is given about the nature of the stimuli they touch. Only one predictor, TAL, emerged as a relatively good predictor for both sexes, and even it was considerably better for females than for males. Admitted anxiety was a useful predictor only for females. It should be noted that in the present study with young college students, relatively moderate levels of anxiety and expressed aversiveness to tactile stimuli were represented, and one may speculate that different results might be expected with anxious psychiatric patients or with groups of "tactile maximizers" and "tactile minimizers".

The present results suggest that behavioral predictors may differ considerably for males and females. Further work needs to be done to clarify the basis of these differences and to determine the extent to which the behavior of each sex is influenced by basic differences in psychosexual make-up and by other variables such as social constraints against certain kinds of behavior, e.g., the willingness of males vs. females to openly admit fear or to admit positive and negative feelings in certain contexts.

REFERENCES

- Anastasi, A. *Differential psychology*. New York: Macmillan, 1958.
- Casler, L. The effects of extra tactile stimulation on a group of institutionalized infants. *Dissertation Abstracts*, 1965, 26 (6), 3495.
- Davis, Catherine W. The F/F Technique: A new projective personality assessment method. *Psychotherapy: Theory, Research and Practice*, 1964, 1 (4), 163-165.
- Eisenberger, R. Drive, reinforcement and personality. *Psychological Reports*, 1966, 18 (13), 855-862.
- Ekman, G., Hosman, J., & Lindstrom, B. Roughness, smoothness, and preferences: A study of quantitative relations in individual subjects. *Journal of Experimental Psychology*, 1965, 70 (1), 18-26.
- Heider, G. M. Vulnerability in infants and young children: A pilot study. *Genetic Psychology Monographs*, 1966, 73 (1), 1-216.
- Johnson, W., & Terman, L. Some highlights in the literature of psychological sex differences published since 1920. *Journal of Psychology*, 1940, 9, 327-336.
- May, R. Sex differences in fantasy patterns. *Journal of Projective Techniques & Personality Assessment*, 1966, 30, 576-586.
- McClelland, D. Wanted: a new self-image for women, in R. J. Lifton (Ed.), *The woman in America*. New York: Houghton Mifflin, Fall, 1965.
- Mendelsohn, G. & Griswold, B. Anxiety and repression as predictors of the use of incidental cues in problem solving. *Journal of Personality and Social Psychology*, 1967, 6 (3), 353-359.
- Murphy, L. B. *Experiments in free methods*. New York: Basic Books, 1956.
- Schiebel, D. R. Tactile behavior in psychopathology. Unpublished doctoral dissertation, University of Michigan, 1965. (V 27 2 1966, University of Microfilms, Ann Arbor, Michigan.
- Spiegel, D. E. *The Spiegel personality inventory*, Los Angeles: Author, 1965 (a).
- Spiegel, D. E. *The Spiegel personality inventory manual*, Los Angeles, Author, 1965 (b).
- Tyler, L. *The psychology of human differences*. New York: Appleton Century Crofts, 1956.
- Wilson, G. D. Social desirability and sex differences in expressed fear. *Behavior Research & Therapy*, 1967, 5 (2), 136-137.
- Zuckerman, M., Kolin, E., Price, L., & Zoob, I. Development of a sensation seeking scale. *Journal of Consulting Psychology*, 1964, 28, 477-482.
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Self-Described Depression and Scores on the MMPI *D* Scale in Normal Subjects

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Summary: The general hypothesis was that Ss with high *D* scores on the MMPI would show a greater tendency than low scorers to describe themselves as depressed; also, that more females would report depression. In the first stage, it was found that the *D* score did not differentiate between two groups of normal male high school seniors grouped according to response to the questionnaire item, "Do you ever get very depressed?" In females a higher score was associated with an affirmative answer. The second stage compared normal adolescents, grouped according to high or low *D* scores, to determine if their responses to the same question differed. It was found that a high score was more likely to be accompanied by self-described depression in both sexes. In both high and low *D* groups, more than twice as many females than males gave affirmative responses.

It was the purpose of this present study to compare the self-description of depression in normal males and females with their scores on the depression, or *D*, scale of the Minnesota Multiphasic Personality Inventory (MMPI). The logical expectation was that Ss with high *D* scores would be self-described as depressed in larger numbers than would those with low test scores.

Problem

The *D* scale of the MMPI was empirically developed to measure the degree of clinical depression, which is basically characterized by a pessimistic outlook on present and future living, feelings of hopelessness and/or worthlessness, retardation of thought and action, and at times a preoccupation with death and suicide. The development of the scale was based upon a clinical sample which manifested relatively uncomplicated depressive behavior, but it is to be noted that depression may also accompany a variety of other emotional disturbances and may complicate personality configurations of almost any kind.

The 60 test items comprising the scale in general reflect behavioral correlates of clinical depression, including item content which is concerned with apathy, unhappiness, diminished external interests, physical accompaniments of depression, and hypersensitivity. While the *D* scale was derived from a group of Ss who were

largely psychotic, it is nevertheless considered to measure depressive mood and reaction independent of the underlying character structure or adjustment status of an individual. Calvin and Holtzman (1953) reported that self-depreciation in a normal fraternity group correlated highly with *D* scale scores, while Brown and Goodstein (1962) concluded that young women who scored low on the MMPI depression scale tended to be higher on measures of good adjustment. Leary (1952) found that patients who employed mechanisms of self-depreciation scored highest on either *D* or *Pt*. In another investigation, Berdie (1954) compared MMPI scores with self-description personality ratings of counselees and controls. The highest correlation was obtained between self-ratings of depression and *D* scale. While certain of the *D* scale items may be considered as sensitive and personal by some individuals, a recent study (Gravitz, 1967) has shown that only two of the 60 items on the scale were omitted as *Cannot Say* responses by more than five per cent of a large number of normal Ss. The average male omitted 0.99 per cent of the *D* scale items, while the average female left 1.12 per cent blank. Thus, it is to be expected that there would be a high rate of response to the items comprising this scale, and the resultant *T*-score should therefore be a more valid indicator of the response to the test.

Despite its clinical origins, the MMPI has been extensively utilized in the assessment of and research with non-psychopathological Ss, including normal job applicants, non-psychiatric medical patients, vocational counselees, educational groups, and others. Investigations such as the present study will aid in providing normative background data for use with normal populations and will assist in better understanding the MMPI and related personality inventories.

Method

The first stage of the present investigation compared the actual self-description of depression, as checked on a routine psychological assessment screening form, with *D* scale scores on the MMPI. The second part studied high *D* scale scores to ascertain the kind of relationship with the self-description of depression. In both instances, *T*-scores were used as the bases for analysis.

The general hypothesis in the study was that Ss with high *D* scores would show a greater tendency to describe themselves as depressed. It was also hypothesized that more females than males would describe themselves as depressed.

The Ss were normal high school seniors attending several educational institutions which drew from essentially similar middle-class socio-economic and geographic areas. No indications of emotional distress were evident during pre-test interviews. All Ss were employment applicants who had been routinely administered a group psychometric battery, including the MMPI, Henmon-Nelson

Test of Mental Ability, and a personal history questionnaire. Since the Ss were all voluntarily active job seekers, it would be reasonable to assume that they would want to present to a prospective employer as good an image of themselves as they could. For this reason, overtly acknowledged depression would logically appear to be relatively more strongly defended against and, hence, a positive response to a question about the experience of depression would reflect weaker defenses and more intense affect strength.

Results

Part I

In the first part of the study, four groups of Ss were established on the basis of checked YES or NO responses to the query, "Do you ever get very depressed?", which was part of the routinely administered questionnaire. These groups were 50 males who responded affirmatively, 50 males who replied in the negative, 50 females who responded affirmatively, and 50 females who replied in the negative. All Ss ranged in age from 16 to 18, with a mean of 17. The mean IQ scores for all groups were within the Average range. Table 1 presents descriptions of these groups and their scores on the MMPI *D* scale.

Results of data analysis indicated that there was no significant difference in *D* scores between males who answered affirmatively and in the negative to the question ($z = 0$, N.S.). However, the difference was significant between the two female groups in that the *D* score was higher for those who replied YES ($z = 2.92$, $p < .01$).

Table 1

MMPI *D* Scale Correlates of the Question, "Do You Ever Get Very Depressed?"

Group	N	Mean Age	Mean IQ	Mean <i>D</i> Score	Standard Deviation
Male — yes response	50	17	97	53.4	10.2
Male — no response	50	17	97	53.0	9.8
Female — yes response	50	17	98	50.9	9.9
Female — no response	50	17	99	45.9	6.8

Part II

In the second stage of the present study, comparisons by *X*-square analysis were made between normal male and female *Ss*, grouped according to high or low *D* scores on the MMPI, to determine if there were differences in their self-description of depression. Scores of $T \geq 65$ were designated as high, while *T*-scores between 40-55 inclusive were low.

Table 2 presents the number of *Ss* in each of the groups who checked YES or NO to the depression question.

When the male and female high *D* groups were combined and then compared as a whole with the two merged low *D* categories, it was found that 68 per cent of the high acknowledged depression, while only 32 per cent of the lows did so. This significant difference ($p < .001$) indicated that high *D* scores were more apt than low scores to be accompanied by the self-report of depression, which was consistent with the hypothetical expectation.

Table 2
Comparison of
Self - described Depression between MMPI High *D* and Low *D* Subjects

Group	N	Depression checked as	
		Yes	No
Male — high <i>D</i>	50	9 (18%)	41 (82%)
Male — low <i>D</i>	50	4 (8%)	46 (92%)
Female — high <i>D</i>	50	21 (42%)	29 (58%)
Female — low <i>D</i>	50	10 (20%)	40 (80%)

In *Ss* with high *D* scores, more than twice as many females (42 per cent) than males (18 per cent) replied affirmatively to the question. This difference between the sexes was highly significant ($p < .001$).

In *Ss* with low *D* scores, the difference between males and females was also significant ($p < .001$) in that, again, more than twice as many females (20 per cent) than males (8 per cent) checked YES to the question. It appears evident, therefore, that in late adolescence depression is normally reported with greater frequency among females than in males, even when the MMPI *D* score is low.

There were also significant differences in response to the depression question between male high *D* and low *D* scorers ($p < .001$). The same result was found between these two categories of female responders ($p < .001$). These data confirm the hypothesis that a high MMPI depression score is more likely than a low score to be accompanied by self-described depression in both normal adolescent males and females.

Conclusions

This present study served to validate the MMPI *D* scale, since a relationship was demonstrated between the self-report of depression in normal *Ss* and the MMPI test score which purports to measure that aspect of behavior. Such findings reinforce the value of the MMPI as a measure of personality; however, it is to be noted that the present data were group-derived, and any conclusions drawn from such results are general to similar groups and are not necessarily specific to an individual.

The present investigation indicated that large numbers of late adolescent females will respond affirmatively when asked if they ever get depressed. Because of the high frequency of such response, one may ask if the significance of this kind of reply as a disqualifier is lessened in situations such as employment and academic screening. At the least, psychologists who are engaged in the assessment process should make a broader inquiry

in cases where paper-and-pencil screening points to depression before, for example, rejecting an applicant for employment or denying admission to a prospective student. For males, moreover, an affirmative response on a screening form would appear to be a more significant indicator than for females.

In reference to low *D* scorers, while it was found that fewer of these individuals of both sexes concurrently checked YES to the depression question, further study is required before such low scores may be regarded as valid anti-depression indicators. There are all too few studies in the literature which are concerned with the validity of low MMPI scores, and the meaning of low MMPI depression scores merits investigation.

REFERENCES

- Berdie, R. F. Changes in self-ratings as a method of evaluating counseling. *Journal of Counseling Psychology*, 1954, 1, 49-54.
- Brown, R. A. & Goodstein, L. D. Adjective check list correlates of extreme scores on the MMPI depression scale. *Journal of Clinical Psychology*, 1962, 18, 477-481.
- Calvin, A. D. & Holtzman, W. H. Adjustment and the discrepancy between self-concept and inferred self. *Journal of Consulting Psychology*, 1953, 17, 39-44.
- Gravitz, M. A. The frequency and content of test items normally omitted from the MMPI scales. *Journal of Consulting Psychology*, 1967, 31, 642.
- Leary, T. *Interpersonal diagnosis of personality*. New York: Ronald Press, 1952.
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The Revised CMM as a Test of Perceived M-F and of Self-Report M-F

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Summary: Five studies investigated aspects of validity of the Revised CMM as a test of self-report M-F and of perceived M-F in others. In Study I husband-wife pairs used the Revised CMM to describe the self and to describe own wife or husband. In Study II each *S* described the self, his own mother, and his own father. Study III and IV required self-descriptions and descriptions of the "ideal person" of the *S*'s own sex and age. Study V required each *S* to describe the self and to describe the kind of person the *S* would like to marry. *S*s in studies III, IV, and V were also given the MMPI. In all relevant comparisons, rated males were significantly differentiated from rated females, in the predicted direction. Self-rating scores on the Revised CMM also correlated significantly with MMPI *Mf* scores.

The Concept Meaning Measure (CMM), as devised by Reece (1964), consisted of 45 pairs of polar adjectives, arranged according to standard semantic differential format (Osgood, Suci & Tanenbaum, 1957).¹ A previous paper (Sappenfeld, Kaplan & Balogh, 1966) described the Revised CMM and reported findings demonstrating validity of items and total scores as indicators of perceived M-F in the social stimuli provided by photographs. The studies here to be reported were concerned with validity of the Revised CMM as a test of perceived M-F in specified persons known to the *S*s, as a test of perceived M-F in specified ideal persons, and as a test of self-report M-F.

Validity of the Revised CMM as a test of perceived M-F should be indicated by finding significantly lower (more masculine) mean scores when the rated others are males than when the rated others are females. Validity as a test of self-report M-F should be indicated by two kinds of findings: (a) significantly lower mean self-

rating scores for male *S*s than for female *S*s; and (b) significant positive correlations, within sex groups, between self-rating scores and scores on a previously standardized test of M-F.

Method

*S*s in all studies were introductory psychology studentst (except for Study I, in which half of the *S*s were wives or husbands of such students), and were tested during various quarters, from Spring, 1965, to Winter, 1967. The values of *N* for the various samples are given in Column 4 of Table 1. All *S*s were tested anonymously, but were asked to make up individualized codes to identify the different tests. Tests were collected by *E* immediately after completion, to prevent *S*s from comparing their responses under different instructional conditions. Subgroups in each sample were given the different instructional conditions in the different orders that were possible in each of the studies (except Study V, as indicated below). All instructions in all studies avoided verbal reference to masculinity-femininity.²

Study I

The Revised CMM was administered to several small groups of husband-wife pairs, under two sets of instructions: (a) to use the scales for self-description; and (b) to use the scales to describe the *S*'s husband (or wife).

1 The concept Meaning Measure (Copyright, 1963) was used for experimental purposes, by permission of Michael M. Reece, Department of Psychology, Wayne State University. His co-operation is gratefully acknowledged.

2 Some of the data for the studies reported here were collected and partially analyzed by William A. Comer, Robert C. Henderson, and Leslie C. Plummer. Their contributions are gratefully acknowledged.

Study II

After reading general instructions on how to use the semantic-differential type Revised CMM under three sets of instructions: (a) to describe themselves; (b) to describe their own mothers; and (c) to describe their own fathers.

Study III

During the first testing session, Ss responded to the Revised CMM with two different instructions: (a) to describe themselves; and (b) to describe the ideal person of [the S's] own sex and age." During a second session, about one week following the first session, the Ss were given the MMPI (Hathaway & McKinley, 1951).

Study IV

Testing procedures were identical with those for Study III, except that the Revised CMM was preceded by a test, to be described elsewhere, involving nine 2-minute periods during each of which the Ss were asked to make a list of items belonging to a stated category, such as "beautiful things."

Study V

During the first session, Ss were given six 2-minute periods to list things belong-

ing to each of six stated categories, followed by two forms of the Revised CMM, with instruction (a) to describe the self, and (b) to describe "the kind of person [the S] would like to marry." All Ss received the self-rating form first, in order to avoid any possible influence on self-ratings by a previous rating that might suggest to the Ss that M-F was being tested. The MMPI was administered in a second session about one week after the first session.

Results

The data of Table 1 provide evidence confirming (at or beyond the .001 level) all predictions based on the assumption that the Revised CMM should function as a valid test of perceived M-F in others. Mean scores based on ratings of males, whether these were ratings of actual persons or ratings of ideal persons, were, in every comparison, significantly lower (more masculine) than mean scores based on ratings of females.

The data of Table 2 confirm the prediction that mean scores based on self-ratings of males should be significantly lower (more masculine) than mean scores based on self-ratings of females. Such successful discrimination between the sex

Table 1
Comparisons among Means of Revised CMM Scores Based on Ratings of
Specified Persons known to the Ss, and Specified Ideal Persons
(Perceived M-F in Others)

Study	Person Rated	Group	N	Mean	<i>t</i>
I	Own wife	Males	33	162.4	10.74**
	Own husband	Females	33	102.2	
II	Own mother	Males	43	147.3	8.98**
	Own father	Males	43	113.5	
II	Own mother	Females	32	143.3	7.78**
	Own father	Females	32	109.4	
III	Ideal person, own sex and age	Males	43	120.0	7.07**
	Ideal person, own sex and age	Females	58	143.8	
IV	Ideal person, own sex and age	Males	45	121.7	5.53**
	Ideal person, own sex and age	Females	51	141.5	
V	Ideal person to marry	Males	44	157.0	13.45**
	Ideal person to marry	Females	43	114.0	

** $p < .001$ (one-tailed test)

Table 2
Comparisons among Means of Revised CMM Scores Based on Self-Ratings
(Self-Report M-F)

Study	Means		<i>t</i>
	Males	Females	
I	123.5	148.5	5.38**
II	124.2	135.7	2.63*
III	130.0	148.5	5.05**
IV	132.1	146.5	3.53**
V	127.7	148.6	4.89**

* $p < .01$ (one-tailed test)

** $p < .001$ (one-tailed test)

groups suggests that the Revised CMM has validity as a test of self-report M-F.

The data of Table 3 indicate that, in addition to providing sex-group discrimination, scores derived from self-ratings on the Revised CMM were significantly correlated with scores on the *Mf* scale of the MMPI. Although the *r*'s were generally higher for the male groups than for the female groups, the *r*'s had an acceptable level of significance ($< .01$) for two of the four female groups. the *r*'s in Row 4 were based on all Ss of each sex, in Studies III, IV, and V, who took the Revised CMM under the self-rating condition first, and whose self-ratings could not have been influenced by previous instructions which might have suggested that M-F was being tested. These *r*'s were significantly positive within each of the sex groups, and were as high as the *r*'s

usually found between scores on different standardized tests of M-F, when sex groups are considered separately. See, for example, Gough (1964), Barrows & Zuckerman (1960), and Shepler (1951). The latter reported generally higher *r*'s between M-F tests than those usually reported.

The *r*'s for sex groups combined (See Table 3, Column 4) were significantly positive, though not appreciably higher than those for the male group alone. Such failure to increase the *r*'s by combining the sex groups can probably be accounted for by an interaction effect between the test and the sex of the subjects. This interpretation is suggested by the fact that the regression lines for the sex groups were not continuous but could be made so if a constant value of about one standard deviation (21 points) were added to the score

Table 3
Pearson *r*'s between MMPI *Mf* Scores and Self-Rating Scores
on Revised CMM (Self-Report M-F)

Study	<i>r</i> 's with MMPI <i>Mf</i> Scores		
	Males	Females	Total
III	.55*	.43*	.61*
IV	.39*	.31	.48*
V	.60*	.29	.58*
III-V ^a	.56*	.43*	.57*

* Significantly positive at or beyond the .01 level.

^a Subgroups consisting of all Ss who took the CMM under self-rating condition first (86 males; 101 females)

of each female S. This fact, together with the fact that the r 's were generally higher for the male groups than for the female groups, suggests that the Revised CMM may have adequate validity as a test of self-report M-F only for males.

Discussion

Previously reported findings (Sappenfield, Kaplan, & Balogh, 1966) concerning perception of photographs, and the present findings, suggest that the Revised CMM has validity as a test of perceived M-F in others. However, only limited data are available to determine whether scores based on ratings of others are correlated with any criterion of M-F in the rated others. In Study I ratings of husbands by wives correlated 0.20 (non-significant) with husbands' self-ratings, and ratings of wives by husbands correlated 0.49 ($p < .01$) with wives' self-ratings. It is, however, probable that investigations of the validity of perceived M-F in others are theoretically irrelevant, if it is assumed (as the author does assume) that, regardless of the degree of validity of such perceptions, the S's behavior toward others would be determined by his perception of them. Investigations of relationships between personality variables in Ss and scores on perceived M-F in significant other persons should, therefore, be of greater interest than studies of the validity of perceived M-F as such.

Since the present studies were conducted under conditions protecting the subjects' anonymity, the question might arise whether the Revised CMM would lose validity if given under conditions requiring Ss to identify themselves. The

only available data concerning this possibility were derived from a study using 40 male introductory psychology students who were tested during the Spring Quarter, 1966. For this group, in which Ss identified their tests by using their names rather than codes, the r between MMPI M_f scores and self-rating scores on the Revised CMM was found to be 0.43 (significantly positive beyond the .01 level). In any event, the Revised CMM can serve as a useful research instrument for investigations that permit maintaining anonymity of Ss.

REFERENCES

- Barrows, G. A., & Zuckerman, M. Construct validity of three masculinity-femininity tests. *Journal of Consulting Psychology*, 1960, 24, 441-445.
- Gough, H. G. *Manual for the California Psychological Inventory*. Palo Alto: Consulting Psychologists Press, 1964.
- Hathaway, S. R., & McKinley, J. C. *Manual for the Minnesota Multiphasic Personality Inventory*. New York: The Psychological Corporation, 1951.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. *The measurement of meaning*. Urbana: University of Illinois Press, 1957.
- Reece, M. M. Masculinity and femininity: a factor analytic study. *Psychological Reports*, 1964, 14, 123-139.
- Sappenfield, B. R., Kaplan, B. B., & Balogh, B. Perceptual correlates of stereotypical masculinity-femininity. *Journal of Personality and Social Psychology*, 1966, 4, 585-590.
- Shepler, B. F. A comparison of masculinity-femininity measures. *Journal of Consulting Psychology*, 1951, 15, 484-486.

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Book Reviews

Ahsen, Akhter, *Eidetic Psychotherapy*. Lahore, W. Pakistan: Nai Matbooat, 1965, pp. 246, 10 shillings.

The use of imagery in psychotherapy has a long history. Freud pointed out its potential in *The Ego and the Id*, but its development has been constantly overshadowed by more verbal techniques. More recently, visual imagery has been the basis of such widely differing approaches as those of Desoille, Leuner, Assagioli, and Wolpe. The method is adaptable to different theories of psychotherapy. Its proponents claim to base their techniques on the full gamut of theoretical explanations from the mechanistic to the spiritual. Ahsen's "eidetic psychotherapy" is close to the mechanistic end of that range. Of the currently popular systems of therapy, Wolpe's behavior therapy, with its use of imagery for desensitization and reciprocal inhibition, is probably the closest to Ahsen's approach. Although Ahsen's theoretical position is distinctly anti-Freudian, at least one prominent practitioner, Leuner, who uses imagery and has written extensively on the topic, is a Freudian. Virel's current version often uses procedures that are based on the rites of primitive cultures. Desoille used both Jungian and Pavlovian theoretical undergirdings at different times. Jung used "active imagination," a visualization technique, with some of his patients. Angyal's systematic use of daydreams for therapy is described in his posthumous volume. In effect, many therapists have found the procedure a useful tool.

Ahsen is one of the first to have given us a detailed presentation of the technique in English. Moreover, he has presented a version of the method which is congenial to Western thought because it is devoid of metaphysical speculation and is articulated through specific procedures. Ahsen seems completely unaware of the tradition which preceded his work; indeed, he may well be an "original." He has written in an unevenly edited English which ranges from poetic eloquence to downright confusion.

Ahsen's approach, like behavior therapy (but unlike Assagioli and others), eschews intensive analysis of the personality. It is directed toward the presenting symptoms and aims for rapid results. Most of Ahsen's case illustrations are of hysterical and psychosomatic reactions. The patient is usually brought to an intense emotional upheaval, often with a temporary exacerbation of symptoms, by having him focus his attention on complex visual imagery, the so-called "eidetics" which the therapist regards as undergirding the neurotic symptom.

Like Desoille, Leuner, and others, Ahsen uses a standard repertory of symbolic situations. While the Westerners' themes are more individualistic, Ahsen, a Pakistani, uses themes which relate to the family and its effect on the growing child. Clothing and gifts are used as symbols of attitudes and as vehicles for recovering the full complexity of forgotten hurts that underlie current symptoms. Ahsen's very active therapy aims at the recall, enlivenment, and re-experiencing, via imagery, of critical incidents and related dreams, especially nightmares. Through practice, the imagery becomes enlivened with the appropriate feeling and somatic state that originally accompanied it. Abreaction leads to desensitization, and this is followed by the substitution, under the therapist's guidance, of new and retributive fantasies which displace the old memories (reciprocal inhibition?) and free the patient from the influence of past traumata.

Suggestive of Angyal's principle of universal ambiguity is Ahsen's claim that every symptom has a bipolar character. The therapist uses imagery to get the patient to enliven and strengthen the positive pole, which is always the weaker one. The patient is taught voluntarily to shift his attention between the positive and negative eidetic aspects of these critical incidents, and to enliven the positive pole.

Like the behavior therapists, Ahsen claims that his method provides quick, effective, and inexpensive treatment. Some of the practitioners of these imagery techniques also claim that transference problems are sharply lessened and that therapists can be trained relatively quickly.

Despite these dramatic claims, this reviewer's limited experience with the use of imagery for psychotherapy has been encouraging. He regrets that there is no truly satisfactory presentation in English of the technique. For those who are interested, Ahsen's brief introductory volume can be supplemented with a monograph by Desoille, an article by Krojanker, and Roberto Assagioli's book *Psychosynthesis*. They are all available in English. An inquisitive therapist who is interested in adding new concepts and tools to his armamentarium will benefit from an understanding of this approach. Because of its emphasis on the use of imagery and symbolism, eidetic psychotherapy may be especially useful for helping the relatively non-verbal, working-class client.

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Loosli-Usteri, Marie, *Manuel pratique du test de Rorschach*, Paris: Hermann, 1965, 246 pp.

This fourth edition of the *Manuel pratique du test de Rorschach* makes for delightful reading; its compactness, clarity and organization are commendable. Whether its content represents a unique contribution to Rorschach literature is another story.

Loosli-Usteri's manual, takes the reader, effortlessly, from a brief description of the test, scoring symbols and administration, through the analysis of the results, normative tables to the inevitable, but interesting case presentations.

Scoring system and inquiry are glossed over and the only illustrations given are those of the cases presented. Considering that Loosli-Usteri places such heavy emphasis on the formal aspect of the Rorschach, such omission is felt to be a notable weakness. The interpretation constitutes the bulk of the manual and is also its most interesting part. Although the author deals successively with each determinant and other aspects of the test such as reaction time, approach, succession, etc., her presentation manages to remain cohesive and does not lack continuity. She blends theory with empirical findings and remains close to Rorschach original pronouncements while drawing heavily from the work of European Rorschachers. The research minded American psychologist could formulate some interesting questions which could be derived, for instance, from the author's discussion of the *F* determinant. Loosli-Usteri seems to attach great importance to shock, not only color-shock, but also shock to red (which, following Rorschach, she distinguishes from color-shock), shock to movement, shading, white space, etc. While recognizing the value of analysis of content, the author injects a healthy note of caution against excessive use of psychoanalytic symbolism. Finally, normative tables and an attempt at a theoretical analysis of what she calls the interpretative-projective process, are two notable features of the Manual. One would wish, however, for a more detailed description of her normal samples and a lengthier discussion of her attempt at providing a theoretical basis for the test.

A somewhat irrelevant point, interestingly illustrates the shift in psychologists' perception of their role and many of us, today, would balk at Loosli-Usteri's implication that the psychologist is but a technical assistant to the physician.

One additional point remains to be made. To whom does Loosli-Usteri's work address itself? Who would benefit most by it? The Manual is not, it is believed, adequate for beginners, nor does it substantially enlarge the horizon of experienced Rorschachers. It does, however, provide interesting insights into the thinking of European workers and in reading it, one derives the uneasy feeling that there goes a parallel not necessarily different

world, but one which occasionally could add to or confirm our knowledge. This is not a unilateral situation. Loosli-Usteri's reference to American writers are few and many of them from secondary sources. It is felt that both worlds could greatly gain from increased and enlarged channels of communication.

In summary, while not adequate for beginners, and not felt to constitute a landmark in Rorschach literature, Loosli-Usteri's Manual is wholeheartedly recommended to experienced Rorschachers who are willing to go beyond the boundaries of their traditional concepts.

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Announcement

Switzerland Seeks Research on the Rorschach

The Rorschach-Archiv has been established in Berne, Switzerland and is soliciting the works of authors engaged in research with the Rorschach test. Copies of this Journal are being supplied to them and investigators are being asked to send reprints of their work to:

Walter Jager, Verlagsleiter
Rorschach-Archiv der Stadt- und
Universitätsbibliothek,
Kesslergasse 41, 3000 Bern

Letter to the Editor

Clay As A Projective Device

May I first tell you that I've found the Journal of Projective Techniques and Personality Assessment of great value in my work with the handicapped.

I recently decided to try to work out a means of personality assessment through the medium of clay. In my experiences I'd found the D.A.P. of value when working with physical disability. With the blind or visually handicapped, of course, a D.A.P. is out of the question. However, I recalled a paper presented

by Cecily Grumbine in Chicago ("Action Therapy with Adults" APA, 1966) in which she spoke of the use made of modeling clay in therapy sessions. I had made some use of this myself in counseling sessions while staff psychologist at Schwab Rehabilitation Hospital, Chicago. I felt that, perhaps having the blind or visually handicapped "make-a-person" (rather than D.A.P.) and then using an inquiry, might be useful as a projective device. As you are aware, and as has been well stated in Wachs' article (J. Projective Techniques and Personality Assessment, V. 30, #4, August 1966) there are very few projective devices available for working with the blind.

I have had some 50 evaluatees use this technique, making two figures and in general following "standard" D.A.P. instructions. I have photographed the figures and collected data on the figures and evaluatees which I felt were possibly relevant (weight of clay, used, size, IQ, age,

etc.) I am now in the process of developing the data for possible presentation or publication. However, in examining Psychological Abstracts as far back as 1940, I've been unable to find any reference to the use of modeling clay as a projective device. I find this rather difficult to believe, i.e., that no one has ever made use of this. I would like to know if perhaps you or your staff might be aware of anything published in this area. I wish to make as accurate a presentation as possible in my report.

I would greatly appreciate any available information on such reports, articles, etc.

Thank you for any possible help you can offer.

Sincerely,

Al Manaster

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the interpretation of psychological tests

Joel Allison, Sidney J. Blatt,
and Carl N. Zimet

Through a detailed, systematic analysis of one patient's tests, this text discusses basic assumptions and principles of clinical psychological testing and demonstrates the process of test interpretation and reporting. Within the theoretical framework of psychoanalytic ego psychology, clinical evaluation is presented through the examination of the responses of patients to three major tests (WAIS, TAT, and Rorschach), the interpretation of this material, and the synthesis of it into a meaningful, integrated assessment of personality functioning.

In each chapter, an intensive discussion of test administration and rationales precedes clinical examples of test interpretation. In addition to numerous brief clinical examples, an extensive analysis of a single patient's response patterns are studied and interpreted. These interpretations are progressively combined within each test as well as across the three tests, offering the student an opportunity to learn about the general rationale of a particular test and to observe experienced clinicians at work. Each verbalization in the evaluation sessions is considered so that the process of clinical inference may be examined and many instances of both seeming congruity and contradiction can be discussed. Coming March.

Announcement

7th INTERNATIONAL CONGRESS OF RORSCHACH & OTHER PROJECTIVE TECHNIQUES

August 5-9, 1968
London School of Economics,
London, England

This Congress is sponsored by the British Rorschach forum and Society for Projective Techniques and the International Rorschach Society. The overall theme of the Congress is "The Projective Approach to the Study of Personality." The following papers have been accepted for the Program.

Theory, History, Validation and New Techniques

- John Boreham** (U.K.): "Projective Techniques in a changing climate."
- Mme. F. Cerf and Dr. A. Morali-Daninos** (France): "Dimensions of the affective personality."
- Prof. A. M. El-Meligi** (U.S.A.): "The Experimental World Inventory."
- Prof. A. Friedemann** (Switzerland): "Rorschach, Behn-Rorschach and Zulliger Test."
- Prof. T. Grygier** (Canada): "The Dynamic Personality Inventory."
- Dr. J. Holley** (Sweden): "The Methodology of Rorschach Validation."
- Dr. D. Kadinsky** (Israel): "Projective Techniques—Objective Assessment or Subjective Understanding?"
- Prof. Walter Klopfer** (U.S.A.): "The Theoretical Foundations of Projective Methods."
- Dr. R. S. McCully** (U.S.A.): "Archetypal Qualities underlying the Rorschach Experience."
- Prof. Z. A. Piotrowski** (U.S.A.): "The Mutual Dependency of Technique and Theory in Projective Personality Tests."
- Dr. van Riemsdijk** (Holland): "An Historical Analysis of the Origin and Structure of the 'Psychodiagnostik'."
- Dr. A. Serrate** (Spain): "The Rorschach and the Behn-Rorschach."

Social and Cultural Studies

- Dr. K. W. Bash** (Switzerland): "Z-test findings among Iranian peasants and nomads".

Prof. M. Hertz (U.S.A.): "The expanding role of projective methods in the light of world problems".

Dr. von Krogh (Norway): "Folklore as a projection—an enquiry into Norwegian folklore".

Diagnosis and Therapy

- Dr. Molly Harrower** (U.S.A.): "The Inter-relationship of projective profiles in marital problems".
- Dr. R. Kertesz and Delia O. Mannino** (Argentina): "Projective Techniques in Psychopharmacology and Psychosomatics".
- Dr. Th. Kunke** (Holland): "The Rorschach in cases of Intersexuality and of Change of Sex".
- Prof. C. Maffei and Colleagues** (Italy): "Comparative Linguistic Analysis of Rorschach Responses in Schizophrenic patients and their families".

H. Phillipson (U.K.): "The setting for the therapeutic use of projective methods."

Dr. M. A. Rickers-Ovsiankina (U.S.A.): "The Psychological Significance of Colour Perception".

Prof. M. Selvini (Italy): "The Rorschach in Anorexia Nervosa".

Prof. A. Silveira (Brazil): "Impulsiveness and ways of mastering it: Rorschach data with 100 adults".

Dr. van emde Boas (Holland): "The Rorschach as an aid in decisions on doubtful abortion".

Dr. L. Zucker (U.S.A.): "Ego Structure in Schizophrenia".

Developmental Psychology, Child and Family Studies

- Lady Francis-Williams** (U.K.): "The Rorschach with cerebral-palsied children".
- Dr. Hiroshi Motoaki** (Japan): "The use of the Japanese C.A.T. in the personality assessment of children".
- Prof. Carlo Rizzo** (Italy): "A Longitudinal Rorschach Research Study with a large family".

In addition to the above, there will be three symposia and a number of short papers to be identified later. Elaborate plans are being made by the committee, to provide sightseeing and entertainment for the members of the Congress and their guests. Further information can be secured from the Chairman of the Administrative Committee: Mrs. Celia Williams, 32 Willes Road, London N.W. 5, London, England. ● Information on flight service from the U.S. may be obtained from Thos. Cook (New York), official travel agents for the Congress.

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Editorial

I have just returned from the mid-year meeting of the Board of Trustees of the Society for Projective Techniques & Personality Assessment, Inc. It was a cold, snowy day in Denver but we were actively engaged in the business of the Society and agreeably enveloped in the warmth of our collaboration.

Earl Taulbee is completing a manual which will describe the jobs of the various officers and committees in detail so that in the future, members taking an active part in the Society's affairs will have more structure to guide them. A discussion arose during the meeting as to whether we should emphasize the broad field of personality assessment or retain our emphasis on projective techniques as such. Opinion on the Board was divided and the President plans to appoint an ad hoc committee to recommend policy in this area. The roles of the Eastern and Western representatives were discussed, and it was decided to involve them more actively in the Society's affairs by putting them on both the Program and Awards committees.

In regard to the Journal, the Board approved a 10% increase in cost of printing which is necessitated by rising costs on the part of Graphic Arts Center.

The big event of the year will be the International Congress of Rorschach and other Projective Techniques which will take place in London this August. The Society hopes to sponsor a fifty-passenger affinity fare arrangement for this International Congress. All readers of this Journal who would like to be included should

send immediately their names and the number of seats they would like to have on the flight to Mr. Walter Steiner, Thos. Cook & Son, 166 No. Michigan Ave., Chicago, Ill. 60601. I hope as many of you can come as possible.

A new feature that we hope to introduce in the Journal starting with the next issue is a News and Notes column to be edited by Earl S. Taulbee. The suggested title for this feature is "Earl's Pearls." If you have anything to say that you do not feel is worth an article or a letter to the editor, write Earl and he will print it. One suggestion to Earl for his column is that, in order for us to increase our advertising revenue to meet the rising costs of the Journal, it would be helpful if our membership could let us know of books that they may have coming out on personality assessment or projective techniques. Any member of our Society who could influence his publisher to advertise on our pages would be contributing something that would be very much appreciated by all. Also, there is no doubt that it would help the sales of his book. So, if you have anything to say at all, please write to Dr. Earl S. Taulbee, V A Hospital, Tuscaloosa, Alabama.

In the meantime, all of the Board members are looking forward to seeing you in person at the annual meeting in San Francisco.

WALTER G. KLOPPER

New from Springer

PROJECTIVE TECHNIQUES in PERSONALITY ASSESSMENT

A Modern Introduction

Edited by A. I. Rabin, Ph.D., *Professor of Psychology, Michigan State University*

During the past two decades, projective techniques have undergone significant modifications and changes. A vast literature concerning various aspects of projective techniques has appeared, but until now no comprehensive treatment of these developments has existed. This new volume maintains, with contributions by 18 well-known investigators of projective methods, a balance between the theoretical and applied, between general issues and description of specific techniques. Historical and theoretical interpretations, dealing with more general aspects of projective methods, are included in juxtaposition with clinical and research applications.

A welcome diversity is found in the individual treatment given to the topics. The theoretical orientations vary; some chapters are more clinical in approach; others are more psychometrically oriented.

Students in clinical psychology and of personality assessment will find this volume a systematic and authoritative yet lively, introduction to the field of projective techniques. Because the studies have depth and breadth, they will also appeal to the experienced clinician and researcher.

The contributors are: A. I. Rabin, Jules D. Holzberg, Max L. Hutt, Bertram P. Karon, Samuel J. Beck, Wayne H. Holtzman, George C. Rosenwald, C. Neuringer, Paul G. Daston, Leonard M. Lansky, Mary R. Haworth, Emanuel F. Hammer, Sidney J. Blatt, Joel Allison, Leonard P. Campos, Walter G. Klopfer, Jerome L. Singer, David Levine. 648 pages, \$11.00.

School Apperception Method (SAM)

By Irving L. Solomon, Ph.D., *Assistant Professor of Education, Psychological-Educational Clinic, Queens College of the City University of New York*, and Bernard D. Starr, Ph.D., *Assistant Professor of Psychology, Brooklyn College of the City University of New York*.

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Information regarding admission, fees, and requirements may be obtained by writing to Dr. Hammer, 381 West End Avenue, New York 10024.

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The Blacky Pictures Test: A Comprehensive Annotated and Indexed Bibliography (1949-1967)

EARL S. TAULBEE and DAVID E. STENMARK

VA Hospital, Tuscaloosa, Alabama

Introduction: As any psychologist or psychology student knows, doing a review of the literature on almost any personality assessment technique for the purpose of research or learning its clinical use is extremely laborious and time consuming. However, such reviews, bibliographies, etc., are invaluable in clinical practice and research. It is for this reason that the authors have prepared this comprehensive and annotated bibliography on the Blacky Pictures Test. Many of the articles abstracted are not readily available and have not been published in psychological journals.

Acknowledgement is made to the American Psychological Association for permission to reproduce from Psychological Abstracts those abstracts pertaining to the Blacky through 1965; and to University Microfilms, Inc. for permission to abstract those articles on the Blacky appearing in Dissertation Abstracts. Responsibility for the accuracy of the prepared abstracts is that of the undersigned.

Grateful acknowledgement is made to Gerald Blum, author of the test, for making many of the references available and for his help in other work with the Blacky test.

ABBREVIATIONS

Ana Lo Obj - Analytic Love Object
Ana Ret - Anal Retentive
B - Blacky
BP - Blacky Pictures
C - Control
Cas Anx - Castration Anxiety
dimens - dimensions
DPI - Defense Preference Inventory
E - Experimental
Ego Id - Ego Ideal
Glt Fee - Guilt Feelings
Gp - Group
Homo - Homosexual
Hypoth - Hypothesis

Inds - Individuals
Mas Glt - Masturbatory Guilt
Nar Lo Obj - Narcissistic Love Object
Oed Int - Oedipal Intensity
Ora Ero - Oral Eroticism
Ora Sad - Oral Sadism
pers - personality
Pos Ide - Positive Identification
psy-sex - psychosexual
pts - patients
S - Subject
SE - Superego
Sib Riv - Sibling Rivalry

1. Adelson, J., & Redmond, Joan. Personality differences in the capacity for verbal recall. *Journal of Abnormal and Social Psychology*, 1958, 57, 244-248.

Based upon an analysis of differences in ego organization the hypothesis was offered that "anal retentive" individuals have a greater ability to recall verbal material than "anal expulsives." Subjects were 61 female college freshmen and the Blacky Test was the criterion of "anal-ity."

It was found that "anal retentive" recalled verbal material significantly better than "expulsives" during both an immediate and a delayed recall test. (*Psychol. Abstr.*, 1959, 33, No. 9771).

2. Ansbacher, H.L. "Can Blacky Blacken Testing?" *American Psychologist*, 1959, 14, 654.

This is a letter concerning a bill which was introduced in the Minnesota legis-

Note: For each abstract taken from *Psychological Abstracts*, the reference is cited at the end. Dissertation summaries were prepared from the abstracts contained in *Dissertation Abstracts*. The necessary identifying information for obtaining copies of the dissertations is given after each abstract.

lature to require parents' consent for a child to be psychologically tested. A state senator sponsored the bill after he learned that a nine-year-old had been shown the Blacky cartoons.

3. Aronson, M.L. A study of the Freudian theory of paranoia by means of the Blacky Pictures. *Journal of Projective Techniques*, 1953, 17, 3-19.

Ninety S's were categorized into three groups: paranoid group (psychotic patients), psychotic group (non-paranoid patients), and normal group (30 non-hospitalized individuals). The Blacky Pictures Technique was administered individually to each of the 90 S's and comparisons were made among the three groups. "A large number of analytically-derived hypotheses as to how the paranoids should differ from either of the control groups were tested and many supported by the results of this study. The paranoids, on a whole, tended to differ more markedly from the normals than from the psychotics." (*Psychol. Abstr.*, 1954, 28, No. 2981)

4. Berger, L. Interrelationships of autonomic and personality variables. *Dissertation Abstracts*, University of Michigan, 1958.

Measures of autonomic functioning (skin resistance, heart rate, and respiration rate) at rest and under three stresses were linked to a battery of personality tests (Blacky including EPPS, DPI, & 16 PF). Subjects were 30 male VA psychiatric patients, and 27 male college students. Factor analysis of phi coefficients was used. Five of the obtained factors were found in both samples. They were identified as follows: I. Maternal Fixation; II. Passive Sexual Role vs. Lack of Sexual Confusion; III. Anal Expulsiveness vs. Anal Retentiveness; IV. Interpersonal Hostility vs. Congeniality; and V. Purposeful Giving. Of the remaining 15 factors, 8 were interpretable and 7 were not. The 8 were named as follows: Aggressive Sexual Confusion, Impulse Expression, Suppressed Emotionality, Castration Anxiety, Rejection of Interpersonal Attachment, Cold Pressor Test Reaction, Inhibited Desire for Mothering,

and Neuroticism vs. Adjustment. The data suggest that maladjustment and tension relate to hyper-function in physiological organs at rest. Furthermore, certain specific personality characteristics may be associated with specific organ dysfunction. GSR appeared to be linked primarily to the inhibition of expression of impulses regardless of the specific nature of the conflict. An increase in respiration rate under stress was found to be related to anxiety and hostility, whereas passive dependence correlated with decreased respiration rate. Dependence and preference for regression as a defense corresponded to tendencies to respond to stress with a decreased heart rate. Certain personality patterns appear to be related to specific autonomic responses under all "stresses" whereas other characteristics correspond to specific responses under specific stresses. (L.C. Card No. Mic 58-3637)

5. Berger, L. Cross-validation of "primary" and "reactive" personality patterns with non-ulcer surgical patients. *Journal of Projective Techniques*, 1959, 23, 8-11.

The extent to which Winter's Primary and Reactive scales (see 30:5075) are valid for non-ulcer patients. Winter's cases were compared with those of 30 non-ulcer, surgical patients. Predictions were made about relationships between the scores of these patients on Blacky scales and corresponding Rorschach variables. The Blacky-Rorschach relationships were, in general, the same as those found by Winter. When Winter's original scoring system was used, ulcer patients, as a group, scored higher than non-ulcer, surgical controls in both the Primary and Reactive scales, though there was some individual variability. When the patterns were scored according to the revised scoring system, no differences were found between the two samples. Discrepancy in the findings of the two Blacky scoring systems casts some doubt on the validity of at least one of them. Further research is needed to determine which (if either) is the more accurate. (*Psychol. Abstr.*, 1960, 34, No. 6004)

6. Berger, L., Interrelationship between blood pressure responses to mecholyl and personality variables. *Psychophysiology*, 1964, 1, 115-118.

7. Berger, L., & Everstine, L. Test-retest reliability of the Blacky Pictures test. *Journal of Projective Techniques*, 1962, 26, 225-226.

Analysis of Blacky test records of 50 male college students revealed significant test-retest correlations on all 13 test dimensional scores and all four patterns of conflict. (*Psychol. Abstr.*, 1963, 37, No. 3185)

8. Berlow, N. Psychosexual indicators on the Rorschach test. *Dissertation Abstract*, University of Michigan, 1953.

An investigation of the possibilities of diagnosing psychosexual conflict from Rorschach test protocols. Both the Rorschach and Blacky were administered to 88 Ss — paranoid psychotics, non-paranoid psychotics, and normals. Major results of the study were summarized as follows: 1) ratings of clinicians who judged extent of psychosexual disturbance from the Rorschach generally did not agree with Blacky criterion scores; 2) clinicians did tend to agree significantly ($p .01$) with each other; 3) the empirical study did not reveal any consistent relationship between any Rorschach scoring categories or patterns of Rorschach scores and the Blacky Criterion scores.

9. Bernhardt, R. Personality conflict and the act of stuttering. *Dissertation Abstract*, University of Michigan, 1954.

Subjects, 44 male stutterers ages 11 to 22, were given the Blacky. Later, each S was presented with two sets of reading material for tape-recording. One set was Ss' originally written stories to the Blacky. Second set, stories to Blacky of Ss from another population. These "standard stories" were selected so that they all were of relatively uniform length, and so that they all demonstrated disturbance in the psychosexual dimensions involved. The data were analyzed for relationships between: (a) measures in psychosexual areas of personality, and (b) amount of stuttering. Findings indicate that certain psychosexual dimensions

evoke significantly more stuttering than do other dimensions, and that Ss with the highest over-all amount of conflict show the highest over-all amount of stuttering. It was concluded that stuttering is related to personality difficulties of the stutterer and that certain environmental stimuli related to personality affect his stuttering. (Publication No. 7605. Mic A54-1023)

10. Bernstein, L., & Chase, P.H. The discriminative ability of the Blacky Pictures with ulcer patients. *Journal of Consulting Psychology*, 1955, 19, 377-380.

Three groups of hospitalized patients were studied with the Blacky Pictures: an ulcer group; a psychosomatic, nonulcer group; and a nonpsychosomatic group. Significant differences were found on 3 of 17 dimensions for each inter-group comparison, but no differentiation was found on the basis of oral eroticism — the dimension the authors note was considered most important in a previous study by Blum and Kaufman. The authors conclude that the findings "cast some doubt on the validity of the Blacky Pictures for discriminating ulcer patients from other patients" although "alternative explanations are considered," for the lack of success. (*Psychol. Abstr.*, 1956, 30, No. 6202)

11. Blatt, S.J. An attempt to define mental health. *Journal of Consulting Psychology*, 1964, 28, 146-153.

Seven advanced graduate students in clinical psychology ranked, in an order most descriptive of optimal personality integration, 20 abbreviated paragraphs of Murray's "desires and effects of the 20 manifest needs." There was highly significant agreement between judges, and this pattern of needs is discussed as a conceptualization of mental health. One hundred and sixteen male research scientists, using the same paragraphs, described themselves. Deviation of self-descriptions from the ideal related significantly to measures of creativity, ego strength, manifest anxiety, autonomy, and authoritarian values. Strong conflict on specific Blacky scales was frequently associated with marked deviation of a need related

to the particular psychosexual issue. Methodological considerations in defining mental health, the role of mental health in creativity, and the value of self-description in assessment are discussed. (*Psychol. Abstr.*, 1965, 39, No. 2352)

12. Block, W.E., & Ventur, P.A. A study of the psychoanalytic concept of castration anxiety in symbolically castrated amputees. *Psychiatric Quarterly*, 1963, 37, 518-526.

Forty amputees were compared with normal controls on certain castration anxiety indices of the Blacky pictures. Presumptive evidence validating the castration anxiety concept was found. Presumptive validity was also demonstrated for use of Blacky pictures in investigating psychoanalytic concepts. (*Psychol. Abstr.*, 1965, 39, No. 1932)

13. Blum, G. S. A study of the Psychoanalytic theory of psychosexual development. *Genetic Psychology Monographs*, 1949, 39, 3-99.

The "Blacky Test", a projective technique based on inter-personal relationships among four dogs, was developed with the specific aim of exploring certain psychoanalytic concepts. The 11 cartoons were administered to 119 male and 90 female students in elementary psychology classes who were asked to make spontaneous recordings and to respond later to specific questions in the inquiry. "The protocols were scored in the form of analogues of psychoanalytic dimensions of psychosexual development." Evidence was sought in the writings of Freud and Fenichel to determine whether or not the 31 statistically significant findings (sex differences and dimensional intercorrelations) were consistent with psychoanalytic theory. Agreement between theory and experimental findings was noted in 14 of 15 areas where theory was specifically stated and in all eight areas where theory could be inferred. In eight areas psychoanalytic theory was too vague to permit valid inferences. (*Psychol. Abstr.*, 1949, 23, No. 3650)

14. Blum, G.S. The Blacky Pictures: A technique for the exploration of personality dynamics. New York: Psychological

Corporation, 1950. (*Psychol. Abstr.*, 1951, 25, No. 4154)

15. Blum, G.S. A reply to Seward's "Psychoanalysis, deductive methods, and the Blacky Test." *Journal of Abnormal and Social Psychology*, 1950, 45, 536-537.

16. Blum, G. S. Revised scoring system for research use of the Blacky Pictures. Ann Arbor: University of Michigan, Department of Psychology, 1951. (Mimeographed).

17. Blum, G.S. An experimental reunion of psychoanalytic theory with perceptual vigilance and defense. *Journal of Abnormal and Social Psychology*, 1954, 49, 94-98.

"This experiment was designed to test, within the framework of perceptual behavior, two psychoanalytic hypotheses: (a) the unconscious striving for expression of underlying psychosexual impulses (vigilance); and (b) the warding off of these threatening impulses as they begin to approach conscious awareness (defense)." Using Blacky Pictures, the vigilance hypothesis was supported in 11 of the 14 cases tested; the defense hypothesis was supported in 12 of the 14 cases tested. (*Psychol. Abstr.*, 1954, 28, No. 6928)

18. Blum, G. S. Perceptual defense revisited. *Journal of Abnormal and Social Psychology*, 1955, 51, 24-29.

"In the present study the following hypothesis was submitted to experimental test: Subjects predisposed to use the mechanism of repression in conjunction with a given conflict will, when confronted subliminally with a conflict-relevant stimulus, show defensive behavior directly traceable to the perceptual process itself . . ." The results of this study show that "with selective verbal report, familiarity, set and antecedent conditions all controlled, an avoidance response directly traceable to the perceptual process was obtained." (*Psychol. Abstr.*, 1956, 30, No. 4179)

19. Blum, G. S. Defense preferences in four countries. *Journal of Projective Techniques*, 1956, 20, 33-41.

The Defense Preference Inquiry for the Blacky Pictures was administered to

male college students in Italy, England, the Netherlands, and the United States. Analysis of mean ranks assigned various defenses showed national differences only with respect to preferences for avoidance (regression-denial family), with the Netherlands group having the most preferences, followed by England, Italy, and the U.S. No significant differences were noted for reaction formation, projection, regression and intellectualization. There were widespread individual differences in character structure in all four national groups, with some discernible differences between countries in regard to avoidance preferences. (*Psychol. Abstr.*, 1957, 31, No. 3007)

20. Blum, G. S. "Reliability of the Blacky Test": A reply to Charen. *Journal of Consulting Psychology*, 1956, 20, 406.

This is a reply by Blum to Charen's article (see 31:3013) in which Charen raised some questions as to the reliability of the "Blacky Test;" Charen, in his reply to Blum comments upon the criticisms offered by Blum on his paper. (*Psychol. Abstr.*, 1957, 31, No. 7899)

21. Blum, G. S. An investigation of perceptual defense in Italy. *Psychological Reports*, 1957, 3, 169-175.

The present study, an outgrowth of four earlier researches linking psychoanalytic theory to perceptual processes, attempted a cross-cultural follow-up of Nelson's demonstration of perceptual defense. Results on 10 Ss in a low accuracy group confirmed the perceptual defense phenomenon: an individual who preferred the avoidance alternative for a Blacky Picture in the DPI reported perception of that picture less frequently. Absence of this effect in a high accuracy group provided empirical evidence for the necessity of investigating the effects of personality on perception throughout the continuum of awareness. (*Psychol. Abstr.*, 1958, 32, No. 3646)

22. Blum, G.S. Blacky Pictures with children. In Rabin, A.I. & Haworth, M.R. (Eds.) *Projective techniques with children*. New York: Grune and Stratton, 1960, 95-104.

Following an introduction by A.I. Rabin, F. Helpert and M.R. Hertz review the Rorschach. Apperceptive approaches covered include the CAT (L. Bellak & C. Adelman), Blacky (G.S. Blum), TAT (J. Kagan), MAPS (E. S. Shneidman), P-F Study (S. Rosenzweig), and films (M.R. Haworth). H. Wursten discusses story completions, B.R. Forer offers word association and sentence completion methods, and E. Fromm discourses on projective aspects of intelligence testing. Graphic and artistic procedures are presented by K. Machover (human figure drawing), E.F. Hammer (H-T-P), and P. Elksch (free art). L. B. Murphy, V. Krall, and A.G. Woltmann present play materials. M.R. Haworth and A.I. Rabin cite a host of miscellaneous techniques. In the final section, C.H. Altman comments on limitations, I. Sigel deals with research aspects, and G.F. King summarizes recent developments. (*Psychol. Abstr.*, 1961, 35, 2229)

23. Blum, G. S. Psychoanalytic behavior theory: A conceptual framework for research. In David, H.P., & Brengelmann, J. C. (Eds.), *Perspectives in personality research*, 1960, 107-138.

Academic psychology and psychoanalysis are both used in devising an electronic type model for behavior. It includes input (stimulus), activation of memory traces, processing of ideas, and output (behavioral response). The Blacky test is used as an example. Emphasis on the anxiety potential is the chief contribution from psychoanalysis. (*Psychol. Abstr.*, 1961, 35, No. 2307)

24. Blum, G.S. A model of the mind: Explored by hypnotically controlled experiments and examined for its psychodynamic implications. New York: Wiley, 1961, 229.

A purely conceptual model which "stresses those mental functions occurring between stimulus and response, and pursues them . . . techniques like hypnosis, galvanic skin recordings, and introspection. . . It appraises some significant problems posed by psychoanalysis, at the same time shaping a different theoretical

base." (*Psychol. Abstr.*, 1962, 36, No. 51129B)

25. Blum, G.S. A guide for research use of the Blacky Pictures. *Journal of Projective Techniques*, 1962, 26, 3-29.

A factor analysis of Blacky responses elicited from 210 male undergraduates produced 30 factors which are given dynamic interpretations. Significant relationships between factors along with their relationship to criterion variables are presented. This approach to evaluating Blacky responses clarifies already existing scoring procedures and provides a guide for the systematic interpretation of test records. (*Psychol. Abstr.*, 1963, 37, No. 3188)

26. Blum, G.S. Programming people to simulate machines. In Tomkins and Messick (Eds.) *Computer simulation of personality*. New York: John Wiley and Sons, Incorporated, 1963.

27. Blum, G.S. Defense preferences among university students in Denmark, France, Germany, and Israel. *Journal of Projective Techniques and Personality Assessment*, 1964, 28, 13-19.

An investigation of defense preferences among male university students in Denmark, France, Germany, and Israel was undertaken to follow up an earlier study conducted in England, Italy, the Netherlands, and the U.S. Responses to the Defense Preference Inquiry for the Blacky Pictures revealed: (1) Variability of preferences among the individuals of a given country is as great as the variability between countries (analysis based on average rhos). (2) Some national differences do appear, however, in the analysis of mean ranks—the Danes having a significant overall preference for avoidance, the French for intellectualization. In addition, each of the 4 countries tends to deviate from the combined others in mean choices for at least several items in the test. (3) Dissimilarity indices, derived from comparison of the patterns of preferences across the 11 Blacky areas, show Denmark, France, and Israel to be equidistant from one another, with Germany occupying a somewhat intermediate position to those three. The findings are in

close accord with the previous results, which also pointed to the hazards of indulging in the popular pastime of invoking national stereotypes. (*Psychol. Abstr.*, 1965, 39, No. 241)

28. Blum, G. S., & Hunt, H. F. The validity of the Blacky Pictures. *Psychological Bulletin*, 1952, 49, 238-250.

The present article is intended to survey completed studies of the Blacky Pictures in a number of separate areas. Comparison with theoretical predictions, validation by experimental techniques, prediction of behavior in a group setting, and the clinician's judgment as a standard of comparison are discussed. It is concluded that the results, "encourage further exploration of the test and the personality theory it serves; they strongly suggest that 'there is something there,' but do not necessarily indicate 'what it is,' or 'where it is'." (*Psychol. Abstr.*, 1953, 27, No. 2707)

29. Blum, G.S., & Kaufman, Jewel B. Two patterns of personality dynamics in male peptic ulcer patients as suggested by responses to the Blacky Pictures. *Journal of Clinical Psychology*, 1952, 8, 273-278.

The Blacky Pictures were administered to 14 male peptic ulcer patients. "Exploration of the scored responses, in conjunction with those of three control groups, uncovered two opposite trends within the ulcer sample. Whereas all the ulcer cases wrote strongly oral stories, only one-half selected multiple-choice alternatives indicating oral conflict in the inquiry items on Cartoon one. The discrepancy between close-to-conscious expression of oral needs in the one-half, contrasted with obvious attempts at denial in the other, suggested the hypothesis that there may be two very different patterns of ulcer dynamics. (*Psychol. Abstr.*, 1953, 27, No. 6060)

30. Blum, G.S., & Miller, D. Exploring the psychoanalytic theory of the oral character. *Journal of Personality*, 1952, 20, 287-304)

The purpose was to explore the feasibility of testing psychoanalytic theory by conventional methods. The subjects were third-grade children. Data on orality were

secured from teachers ratings, time sampling, sociometrics, and experiments. Resulting rank order r 's gave strong support for hypotheses dealing with extreme interest in food, and social isolation; fair support for those dealing with need for approval, concern over giving and receiving, and boredom tolerance; and no support for those concerning need to be integratiating, inability to divide loyalties, and depressive tendencies. Those (hypotheses) remaining equivocal concerned dependency, and suggestibility. (*Psychol. Abstr.*, 1953, 27, No. 2353)

31. Blumberg, A. A methodological study of two approaches to the validation of the Blacky test. Doctoral dissertation, Western Reserve University, 1955.

32. Boyd, R.D. Reading retardation as related to personality factors of children and their parents. *Dissertation Abstract*, University of Michigan, 1953.

An attempt to evaluate the impact of pers. factors of poor readers and their parents within the framework of psychoanalytic theory. Subjects were 23 fourth and fifth grade boys retarded in reading, matched with 23 not retarded. Subjects were given the B, Vineland, and WISC. Parents were given the Guilford-Zimmerman and interviewed. Predictions were made that poor readers: (1) would be judged disturbed on a greater number of B dimens.; (2) would more frequently be judged disturbed on those pertaining to the oral period and the identification process; (3) would show lower social maturity; and (4) their mothers would show relative masculinity while their fathers would show relative femininity. The more salient findings were: (1) poor readers were not judged disturbed on a significantly larger number of B dimens.; (2) good readers were judged disturbed more often on Ora. Ero. but less (not significant) often on Ora. Sad.; (3) poor readers were judged disturbed more often on identification process; (4) poor readers did not show significantly lower social maturity; (5) mothers of poor readers were more frequently relatively masculine while their husbands were relatively feminine. There were several other additional findings. Conclusions suggested: (1) the

need to revise the theoretical assumption that early oral deprivation is related to reading retardation; (2) confirmation of the theoretical assumption that disturbance in the identification process is related to reading retardation; (3) that parental pers. variables are related to reading retardation. (Publication No. 5641. L.C. Card No. Mic A53-1591)

33. Briggs, D., Lyon, B., Molish, H., & Dean, R. Selected sociocultural factors affecting interpersonal relations as revealed by the Blacky Pictures: discrimination between "unsuitable" and "normal" naval recruits. *USN Submarine Medical Research Laboratory Report*, 1953, 12, Report No. 227.

One thousand eight hundred and forty-seven recruits who successfully completed their recruit training are compared with 390 recruits who, because of their inability to make the transition from civilian to military life, were designated "unsuitable" for Naval service and were subsequently discharged from the Navy. The report includes (1) a description, from a sociological point of view, of the "normal" sample of recruits, (2) a presentation of gross results or norms for the recruits, (3) the ability of a projective technique to distinguish between "normals" and "unsuitables," and (4) a critical discussion of the dimensions which discriminated between the two groups. (*Psychol. Abstr.*, 1954, 28, No. 4119)

34. Burnham, Rhoda K. The relationship of personality to oral conditions in children: An evaluation by means of the Rorschach and the Blacky Test. *Dissertation Abstract*, New York University, 1957.

The following hypotheses were investigated: (1) significant pers. differences exist between children with disturbed dental conditions and those with little or no dental disease, (2) children with organic mouth disorders would manifest more orality fixation than children with normal dental conditions, and (3) children suffering from a high degree of dental disease would manifest more pers. disturbance than children with healthy

dental conditions. Two groups of 25 children each (15 boys and 10 girls), ranging in age from 6 to 10 were equated in terms of age, sex, and I.Q. The E gp. was comprised of children with a caries index of more than 20 on the D. F. M. scale, and the C gp. with a score of less than 10. Methods used included case histories, questionnaires for parents, Stanford Binet, judgments of overt test behavior, Blacky and the Rorschach. In all but one instance where significant differences are found, the E gp. shows signs of more pers. disturbance than the controls. The E gp. indicates somewhat more disturbance both in interpersonal relationships and emotional reactivity. The inability of the E Ss to cope adequately with feelings of hostility and frustration indicates a lack of control and ego strength. They seem less able to meet successfully the demands of familial relationships, and appear to function less effectively in a given situation. The C gp. seems better able to adjust to the demands of familial relationships, and seems able to function more appropriately to a given situation. The difference between the groups is basically a difference in function. Although there were no conclusive findings of the relationship between dental disease and personality, there were provocative trends in the direction of such a relationship. (L.C. Card No. Mic 58-647)

35. Carp, Frances M. Psychosexual development of stutterers. *Journal of Projective Techniques*, 1962, 26, 388-391.

Stutterers did not display any more anal retentiveness in the Blacky than did nonstutterers. Higher scores in castration anxiety (males) and penis envy (females) were found as predicted among stutterers. In general, higher oral erotic and oral sadistic scores were found among stutterers, and these results are consistent with psychoanalytic theory. (*Psychol. Abstr.*, 1963, 37, No. 6979)

36. Charen, S. Reliability of the Blacky Test. *Journal of Consulting Psychology*, 1956, 20, 16.

Charen used Blacky test in his dissertation (among Rorschach & 15 paper & pencil tests) with TB patients. Used only inquiry items. Used rp to determine test-

retest reliability (4 month interval). Scored by Blum's revised scoring system. From the other tests, no basic personality changes occurred in four months "...the highest rp obtained was .519 for castration anxiety with remaining cards low or negative." Charen suggests that equivocal results on Blacky might be due to poor reliability. . . . (*Psychol. Abstr.*, 1957, 31, No. 3013, brief report)

37. Charen, S. A reply to Blum. *Journal of Consulting Psychology*, 1956, 20, 407.

Charen, in his reply to Blum comments upon the criticisms offered by Blum of his paper. (*Psychol. Abstr.*, 1957, 31, No. 7899)

38. Christiansen, B. Attitudes towards foreign affairs as a function of personality. Oslo, Norway: Oslo University Press, 1959, 283.

A comprehensive survey of the relationships between attitudes toward foreign affairs and individual psychological factors reviews the evidence supporting and contravening a range of hypotheses that invoke generalization of responses, unconscious or latent factors, frustration, insecurity, nationalism, and knowledge or information level as well as the role of social norms and reference groups as determinants of such attitudes. By means of attitude scales and such projective techniques as the Rosenzweig P-F Study and the Blacky tests, several hypotheses were tested on samples of applicants and students at the military and naval academies in Oslo. Detailed analyses of results and English versions of the scale are included. The relationships between attitudes toward foreign affairs and personality factors are found to be complex and to depend at least on manifest aggressiveness, latent aggressiveness, and nationalism. (*Psychol. Abstr.*, 1961, 35, No. 3340)

39. Clapp, C. Two levels of unconscious awareness. *Dissertation Abstracts*, University of Michigan, 1951.

Hypothesis investigated: When "more" and "less" emotional stimuli are presented in pairs at two levels of unconscious awareness, there will be a relative shift in the judgment of perceptual clarity, from more emotional stimulus seen as

clearer at the lower level toward less emotional stimulus seen as clearer at the higher. The pairs of "more" and "less" emotional stimuli were selected from the Blacky. Three pairs of pictures were chosen: two (Pairs 1 and 3) consisting of a more and a less emotional picture, and a control pair (Pair 2) with two less emotional pictures. The two levels of unconsciousness awareness were manipulated by tachistoscopic presentation of the pairs at fast and slow shutter speeds. The Ss (volunteer college students of both sexes) were only required to judge which picture within a given pair seemed the "clearer" (i.e., closer to looking like something). The experimental Ss (N 82) were given the group B prior to the tachistoscopic trials in order to "saturate" them with the emotional qualities of the pictures. The results showed that they behaved in accord with the hypothesis. Statistically significant shifts from relative clarity preference for the more emotional stimulus at the fast speeds to clarity preference for the less emotional stimulus at the slow occurred on Pairs 1 and 3. As predicted, Pair 2 did not show a shift. Behavior of Ss (N 64) in the appropriate control condition supported the interpretations made from the E data on Pairs 1 and 2, since shifts did not occur on the former and did occur on the latter. The controls shifted in the same direction as the experimental Ss on Pair 3, which did not support the hypothesis. The notion of "unconscious behavior" was borne out by the experimental Ss, who were able to discriminate between degrees of emotionality at two levels of awareness below consciousness. The Ss were more responsive to the highly emotional material at levels farther from direct awareness, and less responsive to it at levels closer to direct awareness. These facts were interpreted as specific support for the psychoanalytic concepts of ego defense and repressed strivings. (Publication No. 3479)

40. Cohen, A. R. Experimental effects of ego-defense preference on interpersonal relations. *Journal of Abnormal and Social Psychology*, 1956, 52, 19-27.

The hypothesis that a connection exists between the personality defense of

interacting individuals and their attitudes toward and perceptions of their interaction is explored by assessing the defense mechanisms of a group of Ss to psychosexual stimuli, the Blacky Pictures, and evaluating their interaction when pairs of Ss are engaged in a task which arouses a specific psychosexual disturbance. The results indicate that the interaction of two people who project the same psychosexual impulse is more negative than pairs of people who use other defenses. Dissimilar defenses do not seem to adversely affect the interaction; however, when both partners have high conflict, more negative interaction tends to result than when only one is disturbed. The relative hierarchies of defense mechanism and psychosexual dimensions, with regard to their effect on interpersonal relations are discussed. (*Psychol. Abstr.*, 1957, 31, No. 2539)

41. Cohen, S. I., Silverman, A. J., Waddell, W., & Zuidema, G. D. Urinary catechol amine levels, gastric secretion and specific psychological factors in ulcer and non-ulcer patients. *Journal of Psychosomatic Research*, 1961, 5, 90-115.

"Gastric secretory studies and urinary assays for catechol amines were carried out on 10 Ss with radiologically proven ulcers and 10 non-ulcer Ss. Psychological tests (Draw-A-Person, Saslow Questionnaire, Blacky Pictures, & Focused Thematic Test) and a special interview were administered. The Ss whose psychological measures were independently scored for high anxiety and low or disturbed expression of aggression were most likely to have a low noradrenaline output, and a duodenal ulcer." (*Psychol. Abstr.*, 1962, 36, No. 3JU90C)

42. Corman, L. Les avantages de la projection libre dans les tests de personnalité: L'exemple du test P-N. *Revue de Psychologie Appliquée*, 1961, 11, 207-219.

The P-N Test (Test Patte Noire) inspired by the Blacky test, consists of a series of plates involving a group of unlabeled pigs, one of which has a black leg and haunch. The child can give the black-legged pig the sex and age he wishes. Information is given as to the interpretation to be placed on various types of re-

sponse, including those at the psychoanalytic level. (*Psychol. Abstr.*, 1962, 36, No. 4HG07C)

43. Corman, L. *Le test PN: Pattennoire*. Paris France: Presses Universitaires France, 1961.

The PN Test is a children's projective technique which, like the CAT, uses the animal on which the child projects his attitudes, thoughts, and conflicts. The author emphasizes the defenses of the ego and introduces a new method of administration which he calls "preference-identification." After the usual themes are given, the *S* is required to express his affective preferences and to identify himself with one of the protagonists (little pigs) in the picture. The test has been standardized on 200 well adjusted and maladjusted children. The 18 thematic cards are obtainable from Le Centre de Psychologie Appliquée, Paris. (*Psychol. Abstr.*, 1963, 37, No. 6464).

44. Corman, L., Corman, Gertrude, & Foulard, F. Une technique nouvelle des tests de projection: La methode des preferences-identifications. (A new technique for projective tests: The identification-preference method.) *Revue de Psychologie Appliquée*, 1960, 10, 25-37.

This is a description of the Blacky test and a discussion of its underlying theory. Projective tests are designed to bring out unconscious tendencies. In most instruments much experience and intuition is required on the part of the psychologist to interpret the stories. In the Blacky the nature of the situations is designed to produce a more definite rationale built around a complete study of ego defense mechanisms. (*Psychol. Abstr.*, 1961, 35, No. 4905)

45. Cummings, C. P. Role of various psychological variables in children's nailbiting behavior. *Dissertation Abstracts*, Pennsylvania State University, 1954.

Subjects were 70 nailbiting children ranging in ages from 10 to 14 years. They were individually examined and ranked according to the degree of nailbiting using the index devised by Malone and Massler. A positive relationship was hypothesized between nailbiting and Ora Ero, Ora Sad,

Oed Int, Mas Glt, and Glt Fee. Biserial correlations between nailbiting scores and scores on Ora Ero, Ora Sad, and Oed Int were .50, .38 and .43, respectively. The correlations for Ora Ero and Oed Int were significant at the .01 level, while the correlation for Ora Sad was significant at the .02 level. On the basis of these findings the hypotheses were upheld. Biserial correlations between nailbiting scores and scores on Mas Glt and Glt Fee were .16 and .18, respectively. These correlations, although in the predicted direction, were not statistically significant. (Publication No. 11,822)

46. Davids, A., & Lawton, Marcia J. Self-concept, mother concept, and food aversions in emotionally disturbed and normal children. *Journal of Abnormal and Social Psychology*, 1961, 62, 309-314.

Self-concept was measured via an adjective check list and a self-rating task (child asked to compare himself to others on traits); mother-child relationship was inferred from responses to specific cards of the Blacky test and a story completion test; food aversion was measured from a food preference list. In general, the self-concept and mother-concept were related and there was an inverse relation between these and food aversion. (*Psychol. Abstr.*, 1962, 36, No. 4FF09D)

47. Dawson, J. G., Timmons, E. O., & Noblin, C. D. Dynamic and behavioral predictors of hypnotizability. *Journal of Consulting Psychology*, 1965, 29, 76-78.

Sixteen female psychology undergraduate students were drawn from a pool of 48 Ss. Eight students having the highest "oral" scores and eight having the highest "anal" scores were selected by means of the Blacky test. One of the *Es* attempted a Taffel-type verbal-conditioning problem with each of the Ss. In a separate phrase the two remaining *Es* saw the 16 Ss for a hypnotic induction experiment. A comparison of the two predictors of hypnotic susceptibility revealed that the oral-anal measure failed completely to predict satisfactory hypnotic Ss while the verbal-conditioning test was successful at a highly significant level. (*Psychol. Abstr.*, 1965, 39, No. 8144)

48. Dean, S. I. A note on female Blacky protocols. *Journal of Projective Techniques*, 1959, 23, 417.

Evidence is presented that the identification of the name, Blacky, and of dogs is a characteristically male response. (*Psychol. Abstr.*, 1961, 35, 4907)

49. Doidge, W.T., & Holtzman, W.H. Implications of homosexuality among air force trainees. *Journal of Consulting Psychology*, 1960, 24, 9-13.

Psychological tests were given to 80 airmen divided into four groups. Test records of the homosexual group were different from the control groups. This suggests that homosexuals suffer from an emotional disorder which is pervasive, severe, and disqualifying for military service. The test records of the partly homosexual group were nearly similar to the two control groups. Severe psychopathology accompanies the "markedly homosexual individual." (*Psychol. Abstr.*, 1960, 34, No. 8034)

50. Eastman, D.F. An exploratory investigation of the psychoanalytic theory of stuttering by means of the Blacky Pictures test. *Dissertation Abstracts*, University of Nebraska, 1960.

The possibility of a relationship between severity of stuttering and disturbance in psychosexual development was investigated empirically. Of the several hypotheses tested, the following was considered to be the most crucial: More stutterers will show disturbance on the dimens. of Ana Sad and Glt Fee than on any other of the 12 dimens., and fewer stutterers will show disturbance on Sib Riv than on any other dimension. Subjects were two groups of male stutterers, an adult group (age range from 16 to 38 years) and a children's group (8 to 13 years). Blacky was individually administered to each S and all Ss were rated on a five-point scale for degree of severity of stuttering. The Over-all Dimension Score and an index of psy-sex. disturbance were utilized for the statistical analysis. The hypothesis was confirmed at a high level of confidence for both groups. It was pointed out that the relationship between stuttering and disturbance on the dimens.

of Ana Sad and Glt Fee demonstrated by the study need not be a causal relationship, and other possible interpretations of the results were given. (L.C. Card No. Mic 60-4500)

51. Ellis, A. The Blacky Test used with a psychoanalytic patient. *Journal of Clinical Psychology*, 1953, 9, 167-172.

Comparisons were made between the ratings of 22 psychologists, the author of the test, a patient, and her therapist of the protocol of a Blacky Test. On the basis of data from this one case it is concluded that the test yields good inter-rater reliability but does not yield valid personality assessment. (*Psychol. Abstr.*, 1954, 28, No. 2627)

52. Field, L.W. Personality correlates of college achievement and major areas of study. *Dissertation Abstracts*, University of Houston, 1953.

An attempt to demonstrate that high achievers and low achievers in college and successful physical and social science majors can be differentiated on a series of pers. measures. Subjects were 125 recent college male graduates, subdivided into two major groupings: (1) 29 high and 29 low achievers matched on age, I.Q., and major field of study, and (2) 29 physical science and 29 social science majors. Testing techniques included five pers. measures, a perceptual task, an attitude scale, and seven measures of ident. with the father figure. A modification of the SVIB and the BP were used to measure two levels of ident. Results were as follows: 1. HA made significantly higher scores on the following pers. measures: Conformity, Inquiring Intellect and Confident Self-Expression. They also made reliably higher scores on the F-Scale (More "liberal") and on the Strong perceived similarity measure. There were no significant differences between HAs and LAs on Social Adaptability, Emotional Control, the leveling-sharpening perceptual scores and the B measures of disturbance in ident. 2. Physical science majors made significantly higher scores in two of the pers. measures (Emotional Control and Conformity) and in all three perceptual measures ("sharpeners"), whereas their score on the F-Scale was reliably lower

(more "authoritarian"). In the ident. measures, they scored significantly higher in perceived similarity. They showed significantly less disturbance in ident. with lower scores on the Oed Int car and SSs. There were no reliable differences between physical and social science majors on the following measures: Social Adaptability, Inquiring Intellect, Confident Self-Expression. 3. Inter-correlations between all the measures were carried out within the high-low group, within the physical science group, and within the social science group. Among the intercorrelations which showed consistent relationships were: a) A positive relationship between the F-Scale and the Otis I.Q. The more liberal the higher the I.Q. in all three groups. b) A negative relationship between the F-Scale and disturbance in ident. on the Blacky. The greater the disturbance in ident., the more authoritarian in all three groups. c) A positive relationship between Confident Self-Expression and I.Q. The more confident in self-expression, the higher the intelligence level in the high-low and physical science groups. d) In the social science group, there were positive relationships between disturbances in ident. on the B and Emotional Control and Inquiring Intellect. There was a negative relationship between Conformity and disturbance in ident. on the B. e) In the physical science group, there were negative relationships between disturbance in ident. on the B and Emotional Control and Inquiring Intellect. (Publication No. 8229)

53. Frankel, E. An experimental study of psychoanalytic theories of humor. *Dissertation Abstracts*, University of Michigan, 1952.

Three hypothetical relationships between humor and pers. were formulated. People with relatively strong pers. disturbance along a specific psy-sex. dimen. respond differently to jokes within the context of that dimen. than people with little or no disturbance in the dimension. Hypoth. I. Disturbed individuals will like such jokes more; Hypoth. II. They will dislike them more and; Hypoth. III. They will show both extremes of affect in contrast to the more neutral attitudes of

people with little or no disturbance. In addition, the role of guilt feelings in the enjoyment of humor was explored. Subjects were 82 college students of both sexes. There were measures of disturbance in six aspects of psychosexuality: Ora Ero, Ora Sad, Ana Sad, Oed Int, Cas Anx (Pen Env for females), and Lo Obj. A humor test of 30 cartoons was administered. Subjects were divided into groups on the basis of objective scores indicating degree of disturbance in each B dimen., and their enjoyment responses to the relevant cartoons were compared by means of chi-square tests. Hypoth. II was supported but not Hypoth. I and III. The finding that people with relatively more pers. disturbance along a specific psy-sex. dimen. show a greater tendency than people with relatively less disturbance to dislike cartoons depicting the specific area of disturbance was discussed in terms of its implications for pers. theory and for future research. (Publication No. 5671)

54. Freeman, R.W. A study of delinquent personality: A comparison of certain aspects of the personality structures of delinquent and non-delinquent boys. Masters thesis, Wesleyan University, 1954.

55. Geist, H. *The etiology of idiopathic epilepsy*. New York: Exposition Press Incorporated, 1962.

56. Gibson, R. M. An exploratory study of the effects of surgery and hospitalization in early infancy on personality development. *Dissertation Abstracts*, University of Michigan, 1959.

Investigated the effect of both constitutional-physiological and the experiential-environmental influences on pers. development. Three groups of children (ages 5 to 8 yrs.) born with congenital anomalies were investigated. A group of 29 children served as controls. All Ss were given 4 projective techniques and an intelligence test and their mothers completed 4 attitude and trait inventories. Conclusions: The pers. patterns of the children who had experienced surgery and hospitalization for anomalies within the first 4 months of life differed from those who had remained well. The results bore out

the findings of previous studies which have highlighted the adverse effects of traumatization in infancy on pers. development. (L.C. Card No. Mic 59-2119)

57. Ginsparg, Sylvia. Post-partum psychosis. *Dissertation Abstracts*, Washington University, 1956.

The study investigated the pers. dynamics and underlying psychogenic patterns involved in post-partum psychosis. It was assumed that women with post-partum psychosis had rejected feminine goals and had instead established a masculine identification. Three groups of Ss were studied: Women with post-partum psychosis, normal post-partum women, and non-post-partum psychotic women. Women with post-partum psychosis, when compared with normal post-partum women, indicated a greater tendency toward unresolved oedipal needs, masculine identification, lack of positive ego ideal, and choice of narcissistic love object. Women with post-partum psychosis also indicated greater immaturity in their relationships with significant figures. There were no significant differences in the psychodynamic conflicts manifested by the two psychotic groups. Normal women indicated greater maturity in their attitudes toward significant figures than did either of the psychotic groups. The basic assumptions underlying the study were all substantiated. Post-partum psychosis seems to occur in women who have failed to resolve adequately their unconscious emotional involvement with the parent of the opposite sex and have therefore been unable to fully accept their own sexual role, with its biological as well as social implications. (Publication No. 20, 753)

58. Goldstein, R. H. Behavioral effects of psychological stress. *Dissertation Abstracts*, University of Michigan, 1959.

The effects of a particular type of stress situation on a variety of behaviors were explored. Stress was induced by having Ss think about and later discuss their adjustment in the psy-sex. problem areas depicted by the BP. Performance measures were obtained for each task under stress conditions as well as under

free conditions. It was found that the stress situation impaired word length judgment of words associated to loaded stimulus words, caused Ss to make more errors on a hand steadiness task, and led to poorer performance on the Blacky Analogies Test. These results were obtained only for the male sample, female Ss showing no such impairment. The specific task stress of loaded words was found to result in reduced associative productivity for both the male and female samples, but the general stress situation did not affect over-all productivity on the word association task. (L.C. Card No. Mic 59-2123)

59. Goldstein, S. A projective study of psychoanalytic mechanisms of defense. Doctoral dissertation, University of Michigan, 1952.

60. Granick, S., & Schefflen, Norma A. Approaches to reliability of projective tests with special reference to the Blacky Pictures test. *Journal of Consulting Psychology*, 1958, 22, 137-141.

In this study, the feasibility of developing reliability measures of projective tests based on the clinical aspects of the text material is considered. Using data obtained with the Blacky Pictures Test on 40 school-age children, several hypotheses are explored related to judgment, temporal, and split-half reliabilities. . . Evidence is derived which supports the test's stability to a modest degree. . . This study indicates that integration of varied approaches to a test's consistency may serve as an appropriate alternative to an over-all coefficient of reliability. (*Psychol. Abstr.*, 1961, 35, No. 3466)

61. Grayden, C. The relationship between neurotic hypochondriasis and three personality variables: Feeling of being unloved, narcissism, and guilt feelings. *Dissertation Abstracts*, New York University, 1958.

Alexander's theory of a direct relationship between neurotic hypochondriasis (Hs) and the variables Feeling of Being Unloved, Narcissism, and Guilt Feelings. Thirty Ss, divided into two groups: Gp. I (Hs group), 15 hypochondriacal neurotics, Gp. II (NHs group) 6 non-hypo-

chondriacal neurotics and 9 "normals." Subjects were assigned to E group on the basis of clinical evaluation and Hs scores on the MMPI. The LNG Card Sort and the BP were used. The BP data supported Alexander's theory to the extent of confirming the relationship between Hs and the variables Narcissism and Guilt Feelings, and indicated that hypochondriacs exhibit a greater degree of the Feeling of Being Unloved as compared to non-hypochondriacs. (L. C. Card No. Mic 58-2127)

62. Harris, J.G. Some psychological differences between children with well-aligned incisor teeth and those with spaced protrusive incisors as revealed by the "Blacky" projective test. Masters thesis, Wayne State University, 1964.

63. Hart, R. An evaluation of the psychoanalytic theory of male homosexuality by means of the Blacky Pictures. Doctoral dissertation, Northwestern University, 1953.

64. Hilgeman, Lois M. Developmental and sex variations in the Blacky Test. Doctoral dissertation, Ohio State University, 1951.

65. Housman, H. A psychological study of menstruation. *Dissertation Abstracts*, University of Michigan, 1955.

A study of the psychological concomitants of menstruation. Subjects were 39 schizophrenic women divided into groups of 19 regular and 20 irregular menstruators. Sources of data were: a Menstrual Questionnaire, a Rorschach and a Blacky. Major results: (1) All showed a marked decrease in sexual confusion during menstruation and seemed to have increasing need for affection and approval, and were more sensitive to interpersonal slights. During this time there was an increased defensiveness in the more direct expression of sibling rivalry. (2) The irregular, in contrast to the regular menstruators, were characteristically anal expulsive. They professed more unconcerned acceptance of their sexual role but gave less evidence of a genuine feminine identity than did the regulars. The irregulars showed less concern with conformity. Lastly, they appeared

less involved with sibling rivalry and instead gave more direct expression to feelings of frustration and rejection by their parents. (3) The regular menstruators exerted much more effective control in coping with their impulses and external reality. The irregulars showed a marked abandonment of ego constraints. Menstruation was accompanied by an exacerbation of the masturbatory conflict among the irregulars and a contrasting alleviation of the same conflict for the regulars. (Publication No. 11,298)

66. Irwin, T.C. A contribution to the construct validity of the oral scale of the Blacky Pictures test. *Dissertation Abstracts*. The University of Rochester, 1963.

The Ora Ero and Ora Sad scales were the focus of the research. It was predicted that 38 Ss between the ages of 10 and 14, hospitalized for severe functional emotional disturbance, would show significantly more disturbance on the B oral scales than a normal group. The normal group was composed of 42 children matched for age, I.Q., and socio-economic status. A special semantic differential rating scale was constructed and administered at the conclusion of the B test. On this scale they rated Blacky, Mama, Papa, and Tippy. Conclusions: (1) The Ora Ero scale showed more disturbance in the E group as predicted ($p < .10$). (2) Ora Ero scores were shown to be associated with patterns of perception of the test figures which would be consistent with the psychoanalytic theory of oral eroticism. (3) The Ora Sad scale showed more disturbance in the E group as predicted ($p < .10$). (2) Ora Ero scores were shown to be associated with patterns of perception of the test figures which would be consistent with the psychoanalytic theory of oral eroticism. (3) The Ora Sad scale showed more disturbance in the E gp. ($p < .10$) as predicted. (4) Perceptions of the test figures found to be related to Ora Sad scores were considered consistent with psychoanalytic postulates about the nature of oral sadism. (5) Of the six new oral scoring dimensions, one significantly differentiated the two groups ($p = .01$) and one tended to differ-

entiate them ($p=.07$). (Order No. 63-7769)

67. Jacobs, Mildred O. A validation study of the oral erotic scale of the Blacky Pictures test. *Dissertation Abstracts*, The University of Oklahoma, 1957.

A correlational study of the relationship between scores on the Ora Ero scale and scores on two separate criteria of orality, a self-rating scale and a perceptual test. The perceptual test involved tachistoscopic presentations of 12 pictures of everyday objects, 6 of which represented "oral cues" and 6 of which were non-oral in symbolic value. Subjects were 48 high school and 47 college students. An analysis of the results revealed no significant relationship between scores on the Ora Ero scale and scores on the self-rating scale. An analysis of relationship between the Ora Ero scale and the perceptual test revealed several significant correlations, but of a value less than +.50, a value chosen as minimal for practicable test validity. When the *Ss* were broken down into separate groups on the basis of sex and age, significant correlations as great as $r=+.71$ and $r=+.62$ were found to occur. In light of the diverse findings, it was concluded that the Ora Ero scale appears to be a valid test of orality only for some groups of individuals, and may be influenced by such factors as age, sex, test sophistication and perhaps pers. factors unknown from the data at hand. (Publication No. 21,974)

68. Josephthal, D. Investigation of the psychoanalytic theory of depression by use of the Blacky Pictures. Undergraduate thesis, Wesleyan University, 1956.

69. Kahane, T. An experimental investigation of a conditioning treatment and a preliminary study of psychoanalytic theory of the etiology of nocturnal enuresis. Doctoral dissertation, UCLA, 1954.

70. King, F.W., & King, Dorothy C. Projective assessment of the female's sexual identification, with special reference to the Blacky Pictures. *Journal of Projective Techniques and Personality Assessment*, 1964, 28, 293-299.

The frontispiece of the Blacky Pictures

was projected to groups of junior and senior high school students; stories were obtained from 72 males and 64 females. A comparable slide of "Whitey the cat" provided the stimulus for stories from an additional 71 male and 71 female students. Identification responses were assumed to occur when an *S* referred to a sexually ambiguous cartoon character as being of the same sex as the *S*. When this operational definition of identification was employed, female did not identify more with "Whitey the cat" than with "Blacky the dog;" in fact, over 95% of the female *Ss* referred to the main character as masculine regardless of which stimulus was presented. Male and female responses were essentially indistinguishable. There was no significant difference between male and female *Ss* in identifying the cartoon sibling as female. The results are interpreted in terms of linguistic and other socio-cultural determinants rather than in terms of psychodynamic factors. Caution is urged in the interpretation of alleged cross-sex identification responses in the verbal productions of females on projective techniques. (*Psychol. Abstr.*, 1965, 39, No. 7900)

71. Lasky, J.J., & Berger, L. Blacky Test scores before and after genitourinary surgery. *Journal of Projective Techniques*, 1959, 23, 57-58.

Subjects were 30 male urological patients at VA hospital. Procedure: Blacky's given before and after surgery. Results: Pearson *r*'s between before/after scores indicated no significant change in patterns of conflict. Phi coefficients on dimensional scores: Most Affected by Surgery: masturbation guilt, castration anxiety, narcissistic love-object; Also Affected by Surgery: anal retentiveness, sibling rivalry, ego ideal, oral eroticism. Others were not affected (statistically) by the surgery.

72. Leichty, Mary M. The absence of the father during early childhood and its effect upon the oedipal situation as reflected in young adults. *Dissertation Abstracts*. Michigan State University, 1958.

The purpose of the study was to examine the effect of absence of the father on the resolution of the Oedipal conflict.

Four hypotheses were formulated: (1) More of the E Ss, as compared to the C Ss, will maintain strong attachment to the mother; (2) fewer of the E Ss, as compared to the C Ss, will show strong castration anxiety; (3) fewer of the E Ss, as compared to the C Ss, will show strong ident. with the father, and ident. of the E Ss will be more diffuse than will be the case with the C Ss; (4) fewer of the E Ss, as compared to the C Ss, will choose their fathers as the type of figure adapted for their ego-ideal. Subjects were 62 male college freshmen. Fathers of the E Ss (N=33) were overseas during WWII and the fathers of the C Ss (N=29) were not overseas, when the boys were between the ages of 3 and 5. Support was obtained for 3 of the 4 hypotheses. (1) There was some evidence to indicate that Oed. Int. is greater in those Ss who were separated from their fathers. However, the data was contrary to one aspect of the first hypothesis, in that the C gp. rather than the E gp. tended to choose the mother as an anacritic love object. The E gp. appeared to make a narcissistic choice of love object. (2) The hypothesis dealing with ident. received the most consistent support. (3) The hypothesis dealing with the choice of the father as ego-ideal was somewhat supported by the data. (4) The hypothesis dealing with castration anxiety was not supported by the data. (L. C. Card No. Mic 58-7103)

73. Lindner, H. The Blacky Pictures test: a study of sexual and non-sexual offenders. *Journal of Projective Techniques*, 1953, 17, 79-84.

It has been found that the Blacky Pictures Test is a valid indicator of psychosexual deviation in a selected population. It is sufficiently sensitive to discriminate between two groups of subjects; a sexually deviant group and a non-sexually-deviant control group. To the extent that this test represents psycho-analytic theory, these data may be considered to support such theory as a plausible rationale. (*Psychol. Abstr.*, 1954, 28, No. 2975)

74. Machover, S., & Puzzo, F.S. Clinical and objective studies of personality variables in alcoholism: I. Clinical investiga-

tion of the "alcoholic personality." II. Clinical study of personality correlates of remission from active alcoholism. *Quarterly Journal of Studies on Alcohol*, 1959, 20, 505-527.

Descriptive and statistical summaries of clinical psychological reports on 23 remitted and 23 unremitted alcoholics suggest a schizoid isolation, with cognitive, affective, and conative ambivalence; with fuzziness of self-concept and confusion of level of masculinity and sex role, passivity, and hostility. (*Psychol. Abstr.*, 1960, 34, No. 6253)

75. McNeil, E.B., & Blum, G.S. Handwriting and psychosexual dimensions of personality. *Journal of Projective Techniques*, 1952, 16, 476-484.

A survey of methodology in a number of previous experiments in the area of handwriting and personality is presented in tabular form. The analysis revealed a number of weaknesses in these experiments. "The present study, undertaken with these defects in mind, sought to relate scores on psychosexual dimensions of personality, obtained from 119 undergraduate male Blacky Pictures protocols, to ratings on 16 classical graphology signs and an over-all sign of 'atypicality'... The results provided a number of statistically significant relationships between Blacky scores and handwriting variables." (*Psychol. Abstr.*, 1954, 28, No. 2652)

76. Maes, J.L. Identification of male college students with their fathers and some related indices of affect expression and psychosexual adjustment. *Dissertation Abstracts*, Michigan State University, 1963.

It was predicted that successful adult male identifiers would demonstrate less psy-sex conflict, less defensiveness, and greater affective complexity when placed in a situation reminiscent of relationship with parental figures. Subjects were 124 male college students divided into two groups of 62 successful identifiers and 62 unsuccessful identifiers on the basis of their scores on the Block Adjective Check List. The B, TAT cards, and DPI were administered. Results: (1) The prediction regarding greater psy-sex. conflict for the

unsuccessful identifiers was supported by the data at the .025 level. Four sub-hypotheses were tested predicting greater conflict indices on certain B sub-scores for the unsuccessful identifiers than for the successful identifiers. The 4 B sub-scores were: Cas Anx, Pos Ide, Glt Fee and the Pre-genital Loading. The differences between gps. were significant at the .005 level for the Pos Ide and Pre-genital scores. The Cas Anx score approached significance (.10 level). The Glt score was in the opposite direction than that predicted. (2) There was no measurable differences between the DPI scores for the two groups. (3) The Affective Complexity scores were in the opposite direction to that predicted for the two groups. Psychoanalytic theory appeared to receive some support from the B responses for the two groups. It appeared that Ss who had not been able to identify successfully with their fathers did manifest greater psy-sex. conflict than those who had been able to identify successfully, and that this conflict was most evident at the psy-sex. stages of development where it might be expected on the basis of theory. (Order No. 63-6158)

77. Magnussen, M.G. The Blacky Pictures as personality measures for undergraduate areas of specialization. *Journal of Projective Techniques*, 1959, 23, 351-353.

Teevan found a correlation between personality, as measured by the Blacky Pictures, and vocation in the period of undergraduate specialization. The present study uses this instrument in a more orthodox manner to obtain similar results. (*Psychol. Abstr.*, 1961, 35, No. 4931)

78. Margolis, M. The mother-child relationship in bronchial asthma. *Journal of Abnormal and Social Psychology*, 1961, 63, 360-367.

The responses to the Blacky Test and an objective test of attitudes re child rearing - Parental Attitude Research Instrument (PARI), Schaefer & Bell (1955) - of mothers of children with asthma (A), were compared to those of children with rheumatic fever (RF), and a

group being seen in out-patient clinic dealing with minor cuts and bruises (healthy controls, H). No differences were found on the PARI, and significance was found on only 2 cards of the Blacky. From these 2 cards, it was concluded that A mothers, as compared to the others, had a greater intensity of oedipal conflict and were more inclined to be characterized as oral erotic. (*Psychol. Abstr.*, 1963, 37, No. 1840)

79. Marquis, Dorothy P., Sinnett, E.R., & Winter, W.D. A psychological study of peptic ulcer patients. *Journal of Clinical Psychology*, 1952, 8, 266-272.

A battery of psychological tests was administered to 16 male adult patients with active peptic ulcer. On the basis of test results, two types of "ulcer personality" were distinguished, and designated the "Primary" ulcer type and the "Reactive" ulcer type. Both groups show in common marked oral fixations, sexual maladjustment secondary to strong dependency needs, feelings of inferiority, and "nervous" tensions. They are clearly differentiated, however, with regard to their acceptance or denial of their dependency needs. (*Psychol. Abstr.*, 1953, 27, No. 6072)

80. Martin, J.O. A psychological investigation of convicted incest offenders by means of two projective techniques. *Dissertation Abstracts*, Michigan State University, 1958.

An investigation of certain pers. factors and their relationship to the crime of father-daughter incest. Pers. traits descriptive of the "Phallic Character" were presented as hypotheses to be confirmed. Three hypotheses suggested the continued presence of disturbances in the following psy-sex. areas: Ora Ero, Oed Int, and Cas Anx. Three more hypotheses were concerned with current behavioral reactions associated with the dynamics to be found in the Phallic Character; i.e., the presence of aggressive drives, resentment toward authority, and a contempt and hostility toward women. The final four hypotheses contained predictions concerning perceptions expected from this type of individual. These included percep-

tion of the wife as unavailable sexually, a self-percept of inability to compete successfully with others, perception of the environment as hostile, and perception of young adolescent females as being interested in heterosexual activity. Subjects were 30 Incest Offenders and 41 other prisoners. Instruments used were the BP test, 6 cards from the TAT, and one card from the Michigan Picture Test. Findings indicated that the Incest Offender Gp. had a significantly greater frequency of the proposed reactions on 3 of the 10 hypotheses. These differences were in the areas of Ora Ero, Cas Anx, and Oed Int, supporting the three hypotheses. The Incest Gp. had a significantly higher number of Ss who were judged as generally disturbed in the psy-sex. areas. (L. C. Card No. Mic 60-2375)

81. Michal-Smith, H., Hammer, E., & Spitz, H. Use of the Blacky Pictures with a child whose oedipal desires are close to consciousness. *Journal of Clinical Psychology*, 1951, 7, 280-282.

The use of the Blacky Pictures for projective material is illustrated by a case study. A case study is presented for a nine year-old Negro boy referred for stealing toys. The authors present Blacky responses from the patient, and interpret them as being close to consciousness (Spontaneous Stories). Authors wish is to demonstrate the clinical usefulness of the test. (*Psychol. Abstr.*, 1952, 26, No. 927)

82. Minkowich, A. Correlates of superego functions. *Dissertation Abstracts*, University of Michigan, 1958.

Purpose was to test the generality of superego (SE) functioning across several behavioral areas and to examine relationships among psy-sex. conflicts, attitudes toward parents, reported childhood experiences, and SE functions. Ss were 29 male and 37 female college students. The dependent variables - behavioral fantasy and accompanying affect - were derived from structured situations represented by 6 B pictures involving sex and aggression. Eight gps. of independent variables were employed. The results indicated specificity of behavioral fantasy in most individuals. A greater degree of generality was

revealed in affect across behavioral areas, but the majority again was predominantly specific. Sexual transgression in males was accompanied by unstructured guilt; oedipal aggression by a combination of structured guilt and impulsive affect. In females sexual transgression was negatively related to guilt. Generalized aggression as well as aggression toward mother were accompanied by unstructured guilt. In contrast to moral conflict (transgression accompanied by impulsive affects and unstructured guilt), compliance and the internal orientation were related in both sexes to the following independent variables: low conflict scores; greater maturity of defense preference (avoidance and reaction formation vs. projection and regression); low ambivalence and hostility; similarity to parents in religion and occupation; acceptance of love and guidance; parental indulgence; bureaucratic organization; majority religious groups; and intact homes. The external orientation resembled the impulsive in some of its relationships (parental control, ambivalence) and the internal orientation in others (intact home). Unstructured guilt as opposed to structured guilt revealed similarity of relationships to the external and impulsive orientations. Positive interrelationships were obtained among majority religious groups, bureaucratic setting, parental indulgence, mature defenses, low conflict, and positive attitudes toward parents. Major sex differences revealed an internalized superego factor comprising structured and unstructured guilt and satisfaction over self-control demonstrated by females but not by males, who showed a negative relationship between the two types of guilt. Males, on the other hand, revealed a factor of oedipal jealousy accompanied by guilt and impulsiveness. For females oedipal jealousy was combined with sibling rivalry and accompanied by guilt with no rebellious affects. In general, males showed greater moral concern with sex and females with aggression. Type of punishment had greater impact on males, females being more sensitive to reward. Major identifications and ambivalence were focused on parents of the same sex. In conclusion the evidence suggests that family background,

type of parental control and parent-child relationships all contribute to superego development and functioning in clearly specifiable ways. (L. C. Card No. Mic 59-2156)

83. Molish, H.B., Lyon, B., & Briggs, D.L. Character structure of adjusted and maladjusted naval recruits as measured by the Blacky Pictures. *American Journal of Orthopsychiatry*, 1954, 24, 164-174.

Normative data are presented which were obtained from administration of the Group Blacky technique to a group of 1,847 young men just entering the Naval Service. Comparing these results with those obtained from 390 recruits discharged from the Naval Service prior to completion of training because of their unsuitability, many significant differences were found. The normals had many of the same feelings of dependency, oedipal intensity, etc. of the unsuitables, but the normals were able to channel these feelings and impulses, whereas those who were not able to make an adjustment to the service did not have acceptable methods for handling them. (*Psychol. Abstr.*, 1955, 29, No. 3141)

84. Nelson, S. Psychosexual conflicts and defenses in visual perception. *Journal of Abnormal and Social Psychology*, 1955, 51, 427-433. (Doctoral dissertation, University of Michigan, 1955)

85. Neuman, G.G., & Salvatore, J.C. The Blacky Test and psychoanalytic theory: A factor-analytic approach to validity. *Journal of Projective Techniques*, 1958, 22, 427-431.

The purpose of the present study was to determine whether the dimensions underlying the Blacky Test were consistent with psychoanalytic theory. Blum's (1) original published data for the test were factor analyzed and obliquely rotated. It was found that the factors underlying the test when administered to males corresponded reasonably well with the psychoanalytic oral, anal, phallic, oedipal, latency and genital areas. However, the data collected from female subjects yielded contradictory factors when integrated according to psychoanalytic theory. As a consequence, it was con-

cluded that the results yield partial confirmation for both test and theory when applied to male subjects only. Several reasons for the negative results with female subjects were discussed. (*Psychol. Abstr.*, 1960, 34, No. 1405)

86. Noblin, C.D. Experimental analysis of psychoanalytic character types through the operant conditioning of verbal responses. *American Psychologist*, 1962, 17, 306. (*Dissertation Abstracts*, 1962, 23, 1076-1077, Louisiana State University)

Sixty psychiatric patients were identified as oral or anal by three criterion measures: statements from psychoanalytic literature attributing specific behaviors to orals and anals, Blacky Test scores, and psychoanalytic statements relating behavioral disorders to developmental levels. An apparatus was constructed which could dispense gumballs and pennies. Subjects were differentially reinforced in a Taffel-type operant conditioning sequence employing gumballs as oral reinforcers and pennies as anal reinforcers. The decision to use pennies as anal reinforcers was based on psychoanalytic assumptions equating money and feces. Results supported predictions that selected responses may be manipulated through control of personality variables and reinforcing stimuli.

87. Noblin, C. D., Kael, H. C., & Timmons, E.O. Differential effects of positive and negative verbal reinforcement on psychoanalytic character types. *American Psychologist*, 1963, 18, 412.

Psychoanalytic theory depicts orals as dependent, compliant, and submissive to authority figures; anals are said to be negative, hostile, and resistant to authority figures. Consequently, we hypothesized that orals would show conditioning to positive reinforcement and depression of the dependent variable with negative reinforcement, while anals should perform just the opposite. Strong oral and strong anal undergraduates were selected by the Blacky test. Half of each group was given affirmatory words and half mild criticism following the dependent variable in a simple verbal conditioning situation. The

E was unaware of the character type of any S. All hypotheses were supported.

88. Noblin, C.D., & Timmons, E.O. Verbal behavior of orals and anals: effects of schedules of reinforcement. *American Psychologist*, 1964, 19, 553.

89. Orbach, C.H. Perceptual defense and somatization: A comparison of the perceptual thresholds of obese and peptic ulcer patients. *Dissertation Abstracts*, University of Southern Californai, 1956.

Psychoanalytic theory maintains that obese and peptic ulcer pts. are both fixated at an oral level of psy-sex. development. It further maintains that the repressed impulses associated with such fixation are constantly striving for expression. Whereas the obese ind. gives in to his oral impulse by eating, the peptic ulcer ind. develops a counteractive defense. This study was designed to tap both the impulse striving and the defensive aspect by measuring, on two different levels of awareness, the perceptual responses of ulcer and obese Ss to the tachistoscopic presentation of an oral stimulus. Hypotheses: (1) at a low level of awareness both obese and ulcer pts. should be more vigilant with respect to an oral stimulus than pts. who are not orally oriented, and (2) at a higher level of awareness ulcer pts. should be more defensive when confronted with an oral stimulus than either obese pts. or nonoral controls. Ss were 65 male pts. of VA medical facilities (25 ulcer pts., 15 obese pts., and 25 control pts.). Conclusions: The hypotheses relating to perceptual vigilance and defense were not supported. However, obese and ulcer pts. were shown to be more typically oral in their interests and attitudes. It was speculated that oral character traits represent successful repression of oral conflict. (L. C. Card No. Mic 60-1314)

90. Peak, Helen; Muney, Barbara, & Clay, Margaret. Opposite structures, defenses, and attitudes. *Psychological Monographs: General and Applied*, 1960, 74, No. 8 (Whole No. 495).

Approximately 100 University of Michigan undergraduates were Ss in this study of projection and reversal as defenses and as psychological structures, and of

their role in attitude change. Ss were given a series of tests including: the Blacky Test, the Kent-Rosanoff word association test, the California F Scale, sorting 108 statements about Negroes, and rating 24 concepts on the Semantic Differential scales. Illustrative findings indicated that: (a) preferences for projection and for reaction formation were negatively correlated, (b) tendency to opposite structuring was related to high preference for projection and low preference for reversal, and (c) preference for projection was positively associated with greater distance between ingroup and outgroup attitudes as well as to favorable ingroup attitudes in women and unfavorable outgroup attitudes in the males. (*Psychol. Abstr.*, 1962, 36, No. 1HL25P)

91. Pederson, F., & Marlowe, D. Capacity and motivational differences in verbal recall. *Journal of Clinical Psychology*, 1960, 16, 219-222.

An attempt was made to replicate previous findings of Adelson and Redmond concerning anal retentive individuals having a greater capacity for verbal recall than anal expulsive individuals. Seventy college students of Ohio State University were used as Ss. Scores obtained on the Blacky Test served as the basis for assigning the Ss to expulsive, retentive, or neutral groups. The findings suggest that expulsives tend to recall more disturbing material than the retentives, whereas the retentives tend to recall more insignificant material. "The findings constitute a failure to replicate the major results of Adelson and Redmond." (*Psychol. Abstr.*, 1962, 36, No. 2HJ19P)

92. Perloe, S.I. An experimental test of two theories of perceptual defense. *Dissertation Abstracts*, University of Michigan, 1959.

Designed to test explanations of perceptual defense proposed by hypothesis theorists on the one hand and inhibition theorists on the other. The former assert that perceptual defense occurs as a result of the frequent, inappropriate confirmation of relatively strong hypotheses which are similar to the relatively weak hypotheses against which the defense occurs.

The latter hold that the phenomenon is due to an inhibitory process which interferes directly with the activation of a threatening perceptual response. Subjects were 31 male and 31 female college students. Two sets of predictions were tested, one derived from each theory. The tentative conclusion suggested by this study was that the conditions specified by each theory are sufficient for the production of perceptual defense. (L. C. Card No. Mic 59-2164)

93. Perloe, S.I. Inhibition as a determinant of perceptual defense. *Perceptual and Motor Skills*, 1960, 11, 59-66.

Recognition of Blacky pictures presented tachistoscopically was consistent with an inhibition explanation of perceptual defense. Ss who had previously been assessed as showing a tendency to repress an anxiety-arousing picture had significantly poorer recognition of that stimulus than a group of control Ss. Data were presented which ruled out expectancy and overt response suppression as determinants of the results. (*Psychol. Abstr.*, 1961, 35, No. 3509)

94. Pollie, D.M. Conflict and defense in three psychosomatic syndromes. *Dissertation Abstracts*, University of Michigan, 1957.

Study explored some of the psychological characteristics of hospitalized male veterans who manifested the symptoms of either of three psychosomatic syndromes. Subjects were: duodenal ulcer pts. (N 61), nonulcerated gastrointestinal pts. (N 52), bronchial asthma pts. (N 46), and a gp. of 20 hospital pts. afflicted with nonpsychosomatic illnesses. The psychological test battery included a Personal Information Questionnaire, the BP test, and the DPI. The following characteristics typified the *ulcer patients*. They attempted to conceal signs of psychological disturbance in almost all areas of psychological conflict. They avoided expression of hostile feelings, feelings of inadequacy, and feelings of fear of punishment. They emphasized the approving and tolerant attitudes of the parents and their own masculine adequacy. They were involved in an inner struggle to control expression

of attitudes and needs unacceptable to their self-imposed demands for exemplary behavior. Tension and anxiety accompanied these attempts at control. The *asthmatics* were less defensive than the *ulcer Ss*. They indicated a greater preference for avoidance and a lower preference for reaction formation as defenses. Over attachment to the mother was the focus of their psychological disturbance. She was, for them, the object of attitudes of both intense love and hate, and was regarded as the decisive disciplinarian. The *asthmatics* were intensely hostile toward other members of the family who threatened to come between them and the mother. In their love relationships, they preferred a mother-like love object. Neither the nonulcerated gastrointestinal pts. nor the nonpsychosomatic pts. were very clearly distinguished from the others. However, the former gp. as well as the ulcer and asthma pts., were psychologically more disturbed than the nonpsychosomatic Ss. It was concluded that specific pers. features are exhibited by the inds. who manifest the symptoms of these three psychosomatic syndromes. These features are most similar to those cited by Alexander and his coworkers as etiologically significant for these illnesses. (L. C. Card No. Mic 58-974)

95. Pon, R.C. The psychoanalytic basis of religious, philosophical and moral beliefs. AB thesis, Princeton, 1955.

96. Pryor, D.B. Regression in the service of the ego: Psychosexual development and ego functions. *Dissertation Abstracts*, Michigan State University, 1962.

The theoretical orientation of the study falls under the general heading of regression in the service of the ego. In elaborating the theory of regression, an attempt was made to specify possible contributions to the developing ego from the various psy-sex. stages that might affect the ego functions involved in the progressive and regressive phases. It was suggested that oral receptivity might be related to the regressive phase, that anal retentiveness might be related to the progressive phase, and that the over-all amount of psy-sex. disturbance might be negatively related to the variability of the

psychic level. Ss were 60 male college students. B test was used as a measure of psy-sex. disturbance. Three cards of the Rorschach were administered in gp. form. Responses were scored by the Holt system, yielding measures of primary process, secondary process, control and defense, and an estimated psychic level. The correlations relating to the hypotheses were in the expected direction, but few of them reached significance. It was suggested that both the progressive and regressive ego functions may be related to early development and that the mode of reaction must be considered in this relationship as well as the point of organ fixation. It was also suggested that the same ind. probably has both adaptive and unadaptive ego movements and that the relationship of each of these to development may be quite different. (Order No. 63-1750)

97. Rabin, A.I. Some psychosexual differences between Kibbutz and non-Kibbutz Israeli boys. *Journal of Projective Techniques*, 1958, 22, 328-332.

A group of 27 ten-year-old boys from patriarchal-type families were compared with a group of 27 boys who were reared in the Kibbutz (collective settlement) with respect to three psychosexual dimensions: Oedipal intensity, positive identification, and sibling rivalry. The structured response items of the Blacky Test inquiry were used as a basis for comparison. Consistent with the stated hypotheses, the experimental group gave evidence of lesser Oedipal intensity, more diffuse positive identification, and less intense sibling rivalry. (*Psychol. Abstr.*, 1959, 33, No. 10180)

98. Rabin, A.I., & Haworth, Mary R. (Eds.) *Projective techniques with children*. New York: Grune & Stratton, 1960, P. 392.

Following an introduction by A.I. Rabin, F. Halpern and M.R. Hertz review the Rorschach. Apperceptive approaches covered include the Blacky (G.S. Blum), TAT (J. Kagan), MAPS (E.S. Schneidman), P-F Study (S. Rosenzweig), and films (M. R. Haworth). H. Wursten dis-

cusses story completions, B.R. Forer offers word association and sentence completion methods, and E. Fromm discusses on projective aspects of intelligence testing. Graphic and artistic procedures are presented by K. Machover (human figure drawing), E.F. Hammer (H-T-P), and P. Elksch (free art). L.B. Murphy, V. Krall, and A.G. Woltmann present play materials. M.R. Haworth and A.I. Rabin cite a host of miscellaneous techniques. In the final section, C.H. Altman comments on limitations, I. Sigel deals with research aspects, and G.F. King summarizes recent developments. (*Psychol. Abstr.*, 1961, 35, No. 2229)

99. Reed, W.W. Parent-child relationships reflected by the Blacky Picture test. *Dissertation Abstracts*, University of Nebraska, 1955.

Purpose was to explore parent-child relationships as reflected by the BP test. Study was designed to test a number of specific hypotheses. As a secondary phase of the investigation husband-wife relationships, and the relation of marriage adjustment to over-all psy-sex. disturbance were investigated. Ss used consisted of 30 families, composed of one child in kindergarten and at least one other child. The children included 16 five-year-olds and 14 six-year-olds, and within this group there were 14 boys and 16 girls. BP test was administered to the mother, father, and the child, and the Marriage Adjustment Form to the mother and father. The data provided support for three of the ten hypotheses. Ora Ero, Ana Ret, and Ego Id disturbances in parents were significantly related to the same disturbances in their children. In the parent-child comparisons 8 significant relations (.01) were obtained, and only two would be expected by chance. Marriage adjustment was not significantly related to the over-all psy-sex. disturbance of either parent or the child. Certain hypotheses regarding parent-child relationships received strong support from the data obtained with the BP test. (Publication No. 14,352)

100. Reinhold, Barbara. A comparison of early conflicts in two different types

of adolescent girls. BA thesis, Bennington College, 1962.

101. Rosen, I.C. A comparison of a group of rapists and controls on certain selected variables. Doctoral dissertation, University of Pittsburgh, 1952.

102. Rossi, A.M., & Solomon, P. A further note on female Blacky protocols. *Journal of Projective Techniques*, 1961, 25, 339-340.

These authors questioned the appropriateness of "Blacky" as a suitable name for pictures given to female subjects. Sixty female college students were used; rated DOG, CAT, & BLACKY on semantic differential scale of 1 (masculine) to 7 (feminine). Results: (medians): DOG: 2.16; CAT: 5.69; BLACKY: 1.85. Authors suggested use of CATS for figures and also to change central figures for females. State that they will continue to use Blacky with female subjects because of pragmatically useful results.

103. Ruble, D.W. Psychosexual development of 44 mentally retarded boys: A study. Masters thesis, Illinois State Normal University, 1952.

104. Sarnoff, I., & Corwin, S.M. Castration anxiety and the fear of death. *Journal of Personality*, 1959, 27, 374-385.

"...the hypothesis predicted that persons who have a high degree of castration anxiety (HCA) would show a greater increase in fear of death after the arousal of their sexual feelings than persons who have a low degree of castration anxiety (LCA). Fifty-six undergraduates... were assigned to two experimental conditions in a 'before-after' design which permitted the manipulation of two levels of sexual arousal. Before being exposed to one or the other of these manipulations, Ss filled out booklets containing a scale designed to measure the fear of death (FDS), a questionnaire concerning moral standard of sexual behaviour (MS), and a measure of castration anxiety (CA)... The results clearly confirmed the hypotheses: HCA Ss showed a significantly greater increase in fear of death than LCA Ss after being exposed to the sexually arousing stimuli of the HAS (high arousal of sexual feel-

ing) condition." (*Psychol. Abstr.*, 1960, 34, No. 6264)

105. Segal, A. Prediction of expressed attitudes toward the mother. *Dissertation Abstracts*, University of Michigan, 1954.

An attempt to predict actual behavior by knowing an individual's underlying drives and by knowing his characteristic mode of defending himself against unacceptable drives. A model situation was designed to test the accuracy of predictions made on this basis. This was the feelings toward the mother that would be expressed in an interview by girls who had similar strengths of hostility or dependency drives toward the mother, but who utilized different defense mechanisms. An exploratory study was made of the feelings that would be expressed by girls who had similar defensive reactions but who had differing strengths of hostility or dependency drives toward the mother. The BP test, selected TAT cards and the DPI were administered. Ss were 61 female college students. The results confirmed the major hypothesis that the general defender would express less feelings of hostility or dependency toward the mother than the specific defender. In accord with the predictions the general defender required more stimulation before responding with expressions of hostility or dependency. The general defenders expressed less of their feelings when the situation was ambiguous as well as when it was well-structured. The results failed to confirm the hypothesis that the general defender, when verbalizing any feelings, would express them less forcefully than those expressed by the specific defender. Finally, the general defenders did not verbalize their responses in a manner characteristic of their preferred defense mechanism. In the exploratory study it was found that specific defenders with weak drive expressed less of their feelings than those with strong drive. Those with weak drive appeared to be like the general defenders in not expressing much of their feelings. It was concluded that defense is a crucial variable which must be taken into consideration when attempting to understand and predict behavior, and that the strength of the

drive also must be taken into account. (Publication No. 8407)

106. Seiden, R.H. Onset age and psychosexual conflict in bronchial asthma. Proceedings of the 73rd annual convention of the American Psychological Association 1965. Washington, D.C.: American Psychological Association, Incorporated, 1965, 267-268.

Purpose: "Does the age at which bronchial asthma is manifested relate to the amount and type of psychosexual conflict observed in the asthmatic child?" Ss: 45 male Ss who had developed asthma between birth and 7 years. Ss were arranged into 3 groups according to age of onset (oral, anal, phallic). Blacky test administered by E; scored a la Blum (1951). Results: Anova revealed groups differed significantly in strength of conflict (anal, oral, phallic in descending order). Also, within each onset-age group, the majority of Ss evidenced strongest conflicts in the psychosexual areas corresponding to their symptom onset. (p less than .005). "As regards the possibility of overgratification, it has been observed numerous times that some asthmatic children 'use' their illness as a means of coercing the parents, gaining attention or avoiding anxiety-evoking experiences. It is this manipulative ability which represents the 'secondary gain' of the illness and often leads to excessive parental indulgence and resultant over-gratification.

107. Seward, J.P. Psychoanalysis, deductive method, and the Blacky Test. *Journal of Abnormal and Social Psychology*, 1950, 45, 529-535.

Dr. Blum has contributed an original and stimulating piece of research. He has evaluated it conservatively with a clear eye for its limitations. Since others may not be so clear-eyed, I have underscored two characteristics of the method used to coordinate theory with data and indicated their effect on the interpretation of results. These characteristics are: (1) the exclusion of statistically insignificant but relevant data; (2) the likelihood that logical flaws in a theoretical structure may escape detection. Much of the trouble

goes back to the sprawling loose-jointedness of the theory here concerned. One point stands out clearly: before psychoanalysis or any other system can be verified its postulates and theorems must be dissected out and their logical articulation laid bare. Only then can one say without fear of contradiction that a given finding confirms or refutes the theory.

108. Sharma, S.L. The genesis of the authoritarian personality. *Dissertation Abstracts*, University of Michigan, 1957.

Investigated the genesis and some of the behavioral correlates of the authoritarian pers. as described by Frenkle-Brunswick. The following hypotheses were tested: (1) A significant positive relationship exists between authoritarianism and conflict at 3 stages of psy-sex. development, a) the oral dependent, b) anal retentive and c) oedipal stages. (2) A significant positive relationship exists between authoritarianism and difficulty in establishing an adequate sexual identity.

(3) Authoritarians prefer projection as a defense against oral dependent conflict.

(4) Authoritarians prefer reaction formation as a defense against anal retentive conflict. (5) Inds. with both oral dependent and oedipal conflict would be more prone to authoritarianism than individuals in whom one or both was absent. Ss were 32 male and 32 female undergraduates. They were administered: the California Predisposition to Fascism (F) Scale, BP, DPI, scales from the CPI measuring Tolerance, Flexibility and Self-Acceptance, a Negro Attitude scale, and the Einstellung Arithmetic test. Hypotheses 1b, 1c, and 5 were clearly confirmed. Hypotheses 1a, and 4 were not clearly confirmed, but the results showed a clear trend in the expected direction. Only hypotheses 2 & 3 failed to find any support in the results. The major contributions were a) experimental confirmation of Frenkel-Brunswick's speculations concerning the role of anal and oedipal conflict in authoritarianism, b) suggestive evidence concerning the importance of masturbation guilt in authoritarianism, and a suggestion concerning the role of oral conflict; c) the suggestion that

authoritarianism, itself, may serve as a defense against dependency needs, and d) the establishment of certain important behavioral correlates of, and sex differences in, the genesis and manifestation of authoritarianism. (L. C. Card No. Mic 58-989)

109. Shellow, R.S. Perceptual distortion in the spatial localization of emotionally meaningful stimuli. *Dissertation Abstracts*, University of Michigan, 1956.,

The threat value of stimuli on spatial localization was investigated. The basic hypoth. was that disturbing stimuli would differ from non-disturbing stimuli, when the S's task was to estimate the size of stimulus objects and their distance from him. It was hypoth. that Ss who utilized avoidance or repressive defenses would perceive threatening stimuli as smaller and/or farther, whereas Ss who employed intellectualization and reaction-formation would perceive the threatening stimuli as larger and/or closer. Other defenses were to be explored. The BP test and DPI were administered to 28 college women and 30 men. The results supported a simple avoidance notion of defense. No relationship was found to exist between distance, size, or visual angle settings of threatening stimuli and defenses manifest on the DPI. Almost all Ss made threatening stimuli take up less visual space than neutral stimuli. The crucial factor in whether size or distance was used to manifest avoidance appeared to be the order in which the tasks were presented. (Publication No. 18,649)

110. Shire, A. Personality correlates of defense preferences. *Dissertation Abstracts*, University of Michigan, 1954.

Purposes of the study were to explore: (1) the relationship presumed to exist between an inflexible defense structure and the pers. dimens. of rigidity and maladjustment; (2) pers. correlates of preferences among psychoanalytic defense mechanisms. The DPI, Group Rorschach and the I and N factors of the Guilford-Martin were used. Ss were 135 college students; one gp. of 90 specific defenders and another gp. of 45 general defenders. Two general hypoth. were tested: (1) The

general defenders are more disturbed psychologically than the specific defenders, and (2) the general defenders, with the exception of the gp. selecting regression as its preferred defense, are more inflexible in their perceptions, attitudes, and values than the specific defenders. The first hypoth. was confirmed. This confirmation fits the psychoanalytic theory of the character neurotic, and provides some leads toward a change in psychiatric nosology in the direction of classification based on defensive structure. The second hypoth. was not confirmed. It was suggested that defensive rigidity may not be reflected on the F-Scale and on the Rorschach as it was used in the study. It is also possible that Ss were not sufficiently ego-involved to produce rigid test records. (Publication No. 7724)

111. Sinnett, E.R. An experimental investigation of the defense preference inquiry for the Blacky Pictures. Doctoral dissertation, University of Michigan, 1953.

112. Sirota, L.M. A factor analysis of selected personality domains. *Dissertation Abstracts*, University of Michigan, 1957.

A test of the general theoretical assumption that there is a coherent structure underlying pers. which manifests itself in widely different behaviors. Scores on 136 variables were available for 44 male college Ss. A master matrix of intercorrelations was prepared; examination of this matrix showed that 75 of the 136 variables were significantly interrelated. These 75 variables were distributed among the following domains: psy-sex. conflict (BP test), ego defense preference (DPI), vocational interests (SVIB) values (Study of Values) perception of the attributes of the social gp., physical symptoms, humor preference and recall, interpersonal mechanisms of interaction, and perceptual accuracy. The resulting 8 rotated factors were tentatively named as follows: I. Exploitativeness; II. Expression of Hostility vs. Hostile Withdrawal; III Competition vs. Altruism; IV. Relationship Defining; V. Punishing; VI. Perception of Hostility in Others; VII. Impulse Expression vs. Impulse Control;

VIII. Paternalism. Interpretation of these factors was given. (L. C. Card No. Mic 58-1462)

113. Smock, C.D. Replication and comments: "An experimental reunion of psychoanalytic theory with perceptual vigilance and defense." *Journal of Abnormal and Social Psychology*, 1956, 53, 68-73.

The results of an initial attempt to replicate the results of Blum's experiment (see 28:6928) indicated that stimulus similarity was an important determinant of errors of localization in the test of the perceptual defense hypothesis. A second experiment was designed to test the defense hypothesis under the specified conditions and at the same time yield information concerning the role of stimulus similarity on errors of recognition in the defense series. The results indicated similarity among the experimental and control stimuli was the primary determinant of the frequency of correct response. . . . Evidence was presented which tentatively suggests that systematic errors of localization might be due to an increased generalization gradient associated with anxiety arousal. (*Psychol. Abstr.*, 1958, 32, No. 1166)

114. Stocker, H.S. A study of the self-concept of the acting out adolescent. Unpublished study-copies available from the author.

115. Streitfield, H.S. Specificity of peptic ulcer to intense oral conflicts. *Psychosomatic Medicine*, 1954, 16, 315-326.

To test the hypotheses that those with peptic ulcer could be differentiated from Ss with non-gastrointestinal psychosomatic reactions in that the first would show intense conflict over oral-dependent needs or oral-aggressive wishes, the Rorschach and Blacky Tests were administered to 20 cases in each class. Results from statistical analysis indicated that the oral-dependent need-conflict was not specific to the peptic ulcer cases and that conflict over oral-aggressive wishes tended to be more "common, intense, and chronic in the ulcer patients." These and other findings are related to Alexander's theory of specific emotional con-

flicts. "These findings, while they cannot strictly prove or disprove the theory (Alexander's) do strongly suggest that the theory should not yet be taken for granted." (*Psychol. Abstr.*, 1955, 29, No. 4533)

116. Stricker, G. Stimulus properties of the Blacky Pictures Test. *Journal of Projective Techniques and Personality Assessment*, 1963, 27, 244-247.

The semantic differential technique was used with college sophomores who rated the Blacky cards. The author suggests that naive Ss' tendency to respond to manifest content and to avoid underlying psychosexual themes may be reinforced by social desirability. Another problem posed is that of female Ss tending to identify with figures other than Blacky. (*Psychol. Abstr.*, 1964, 38, No. 2727)

117. Swanson, G.E. Some effects of member object-relationships on small groups. *Human Relations*, 1951, 4, 355-380.

Two groups of 20 each were scored on object relations with the Blacky Test. On the basis of these results and other information, semi-blind analysis of each subject was made. The subjects were then observed in group discussion and ratings were compared with the blind analyses. Four predictions were significant at the .05 level and one at the .01 level. Three additional predictions were in the expected direction but did not meet the .05 criterion. (*Psychol. Abstr.*, 1952, 26, No. 5486)

118. Taulbee, E.S., & Stenmark, D.E. The Blacky Pictures: Individual Scoring Blank - (Dimensional Scoring System). Ann Arbor, Michigan: Psychodynamic Instruments, 1967.

119. Taulbee, E.S., & Stenmark, D.E. The Blacky Pictures: Individual Scoring Blank - Factor Analytic Approach. Ann Arbor, Michigan: Psychodynamic Instruments, 1967.

120. Taylor, K.E. A comparison of a group of pedophiliacs and controls on certain psychological variables. Doctoral

dissertation, University of Pittsburgh, 1952.

121. Teevan, R.C. Personality correlates of undergraduate field of specialization. *Journal of Consulting Psychology*, 1954, 18, 212-214.

This study tried to discover whether personality factors were correlated with choice of a major in undergraduate college. The Blacky Pictures were used for obtaining personality characteristics. Chief results obtained: (1) Majors in "literature" had higher disturbance scores on Oral Eroticism than the other two groups of majors. (2) "Social sciences" group had higher disturbance scores on Oral Sadism, Oedipal Intensity, Guilt Feelings, and Anacletic Love Object. (3) The "science" group had the lowest disturbance scores on nearly all categories. (*Psychol. Abstr.*, 1955, 29, No. 3007)

122. Thomas, R.W. An investigation of the psychoanalytic theory of homosexuality. Dissertation Abstracts, University of Kentucky, 1951.

An investigation of psychoanalytic theory in regard to active and passive homosexuality. The E gp. consisted of 40 overtly homo male veterans of WWII. They were divided into active and passive homo gps. on the basis of their preference for the active or passive role in intercourse. The C gp. consisted of 20 hospitalized veterans. These men showed no homo content on their Rorschach Tests. The MMPI and BP test were administered. Results of the B test: (1) Theory states that all homos have regressed to the early oral stage of psy-sex. development. This was not supported. (2) Active homos. showed a marked disturbance at the Ora Sad level. (3) No hypothesis made concerning Ana Exp. (4) Theory states that passive homos are fixated at the anal stage. Since the aim of Ana Ret is more passive than in Ana Exp, it was hypothesized that they would show disturbance at the Ana Ret phase. Hypoth. supported. (5) One of the important causes of homo is an inadequately resolved Oed complex, which persists as Oed intensity. Theory supported. (6) Active homos would show Mas Glt. Hypoth. not supported. (7) Cas

Anx is a very important consideration in the etiology of homosexuality. It is the Cas Anx which causes a homo man to choose another man for a love object. Not supported. (8) They have a feminine instead of a masculine ident. Theory supported. (9) Psychoanalysis theorized a special type of homo caused by intense Sib. Riv. Hatred toward the older sibling is overcompensated into love and results in homo. Evaluation of the results of this investigation with theory is not possible. (10) Inferred that homos would show disturbance in the area of Pos Ego Id. This inference was made because homos show difficulty in the resolution of the Oed. complex and in pos. ide. Inference supported. (11) Active homos choose Nar. Lo. Obj. Study shows that active homos chose more Nar. Lo. Obj. than did the passive homos. (12) Passive homos choose Ana Lo. Obj. Theory supported. (13) Passive homos act and feel like women. Therefore, they should reveal marked feminine interests on the Mf scale of the MMPI. Theory supported. (14) Active homos are men in every respect and there is nothing effeminate about them. Theory not supported. (L. C. Card No. Mic 60-712)

123. Thompson, M.M. Motivational characteristics differentiating authoritarian and non-authoritarian personalities. Masters thesis, University of Oklahoma, 1957.

124. Timmons, E.O., & Noblin, C.D. The differential performance of orals and anals in a verbal conditioning paradigm. *Journal of Consulting Psychology*, 1963, 27, 383-386.

The oral character type is said to be dependent and suggestible; anals are said to be obstinate and resistant. Consequently, it was hypothesized that orals would condition better than anals in a verbal conditioning experiment. Twenty-four strong oral or anal undergraduate Ss were selected by the Blacky Test; E did not know the character type of any S. A significant increase in the dependent variable was seen for the orals, while a pronounced drop was found for the anal Ss. The data support the prediction based on

Freudian characterological theory. (*Psychol. Abstr.*, 1964, 38, No. 3660)

125. Tober, L.H. An investigation of the personality dynamics and behavior patterns of older people in a mental patient ward as measured by the Blacky Pictures and a Q-rating scale of behavior. Doctoral dissertation, Western Reserve University, 1953.

126. Vernallis, F.F. Teeth-grinding: Some relationships to anxiety, hostility, and hyperactivity. *Journal of Clinical Psychology*, 1955, 11, 389-391.

"Teeth-grinding is recognized among dentists as a pathological dental syndrome designated as 'bruxism.' There is some dispute as to whether its etiology is pathological or systemic and mechanical. The subjects were 40 teeth-grinders and their controls drawn from the student body of The Pennsylvania State University. Teeth-grinders were identified by means of a questionnaire and personal interview." Biserial correlations with the Taylor and Ma scale of the MMPI were low but very significantly above zero; with the Rorschach Content Test, very significantly above zero with hostility, significantly above zero with anxiety. The X^2 on oral-sadism from the Blacky Pictures was also significantly greater than zero. (*Psychol. Abstr.*, 1956, 30, No. 6129)

127. Vroom, Ann L. W. A validation study of the Blacky Analogies Test. *Dissertation Abstracts*, University of Michigan, 1959.

A study to determine some aspects of the construct and predictive validity of the Blacky Analogies Test (BAT). It was hypothesized that these pictures (BP) would arouse anxiety which would tend to affect test performance. The BAT, intellectual measures, and an anxiety measure were administered to 187 female and 114 male freshmen. Results: (1) Factor analysis of the BAT items for the males revealed only one clear factor, identified as Letter Manipulation. (2) Eight orthogonal factors were extracted from the test battery intercorrelations. (3) The BAT loaded most highly on Verbal Flexibility for the females. (4) It was found that the

entire common variance of the BAT was nearly equal to its reliable variance. (5) The correlation between BAT and GPA was .45 and .34 for the male and female samples respectively. (6) The BAT was found to be a better predictor of grade-point average than high school percentile rank for the females, and to improve the prediction of grade-point average of men when included in a multiple correlation with high school percentile rank. (7) Prediction of grades from the BAT fell roughly in the same range as predictions from subtests of the ACE Psychological Examination and the ACE Cooperative English Test, C2: Reading Comprehension. Multiple correlations show the BAT and these other tests to be approximately interchangeable in their predictive efficiency. (L. C. Card No. Mic 60-2582)

128. Watson, J. Some social-psychological correlates of personality. Doctoral dissertation, University of Michigan, 1953.

129. Weingarten, L. Correlates of ambivalence toward parental figures. *Dissertation Abstracts*, University of Michigan, 1962.

Explored psychodynamic correlates of ambivalence for the ultimate purpose of building a systematic theory of its origins and consequences. The BP test, DPI, Minkowich ambivalence test, a measure devised to tap evaluations of parental behavior and biographical questionnaire were administered to 62 college males. Blacky factor correlates suggested that Ss who are ambivalent toward mother have unresolved Oed attachments. They appear simultaneously attracted and repelled by the maternal figure and express feelings of oral craving and resentment over oral deprivation. They revealed aggressive oral and anal impulses. Ss with ambivalent attitudes toward father manifested anal hostility and disturbances in masculine identity. They also seemed threatened by a love object exhibiting maternal characteristics. With respect to defense mechanisms, ambivalence toward mother was associated with the choice of projection and regression item, as well as a general preference for the expression of emotional conflict. Ambivalence toward

father was not as clearly related to specific defense patterns but high-scoring Ss revealed rigid defense choices across psy-sex. areas. The family attitudes questionnaire showed both perceived paternal rejection and maternal dominance in child-rearing to be associated with higher ambivalence scores toward mother. No major relationships were found with ambivalence toward father. Many of the results in previous studies linking ambivalence and biographical data were replicated in the present research. Severe, especially corporal, discipline was more often noted by ambivalent Ss in the case of mother and father. Those less ambivalent reported more frequent reward and infrequent punishment. Maternal non-involvement and inconsistent discipline appeared related to ambivalent reactions, especially toward mother. Ambivalent Ss generally rejected the importance of inculcating moral standards and preferred less parental control in childrearing. The specific disciplinary techniques associated with lower ambivalence were reasoning or explaining the child's mistakes and withholding privileges. Conversely, shaming or making the child feel guilty, and spanking or slapping, were linked with higher ambivalence scores, especially toward the mother. Also, there was a marked tendency for Catholic sons to be ambivalent toward mother. Other positive correlates were sibling death and the presence of many brothers and sisters. In conclusion, the salient empirical findings were elaborated in terms of their contribution to a potentially sound theory of the causes and concomitants of ambivalence toward parental figures. (Order No. 63-5030)

130. Weiss, J. An experimental study of the psychodynamics of humor. *Dissertation Abstracts*, University of Michigan, 1955.

The relationships between two major pers. variables and three aspects of humor behavior were explored. Ss were 45 members of a social fraternity. The BP and a new auxiliary measure (Picture Problem Ranks) were used to evaluate the intensity of conflict related to 5 dimens. of early psy-sex. development: Ora Ero, Ora

Sad, Ana Exp, Oed Int, and Cas Anx. The DPI and several supplementary indices were utilized for the assessment of preferences among the following 5 defenses: avoidance (including repression and denial), reaction formation, projection, regression and intellectualization. The aspects of humor behavior studied were: (1) enjoyment, (2) recall or repression, and (3) the use of humor in daily interpersonal relationships. The following conclusions were drawn concerning the role of pers. in the response to psychosexually meaningful humor: (1) the repression of humor is related to (a) preference for the defense of avoidance and (b) the presence of strong conflict; (2) the enjoyment of humor is related to (a) preference for the defense of regression, (b) the absence of conflict in the dimen. of Ora Sad, and (c) the presence of conflict in the dimen. of Ana Exp. (Publication No. 11,371)

131. White, J.L. Attitudes toward child rearing as related to some psychodynamic factors in mothers. *Dissertation Abstracts*, Michigan State University, 1961.

Major purpose was to examine the relationship between extreme patterns of mothering and maternal pers. dynamics as formulated by psychoanalytic theory. Ss were 72 mothers, primarily wives of college students. Instruments used were the BP test, DPI, and a version of the Parental Attitude Survey Instrument (PARI). The findings offered partial support for the general prediction that mothers designated as extreme in their child rearing attitudes would show stronger evidence of emotional disturbance than mothers not classified as extreme. Findings for specific predictions: (1) Mothers classified as extreme did not display evidence of more intense pregenital strivings than mothers not classified as extreme in their child rearing attitudes. (2) There were no significant differences between extreme and non-extreme mothers on the psy-sex. identification variables of the B. (3) No significance was achieved for the comparison between extreme and non-extreme mothers on rigidity of ego defense preferences as measured by the consistency of preference on the DPI, although the extreme mothers showed

some trend toward preference for statements in the projection category. (Order No. 62-1694)

132. Winter, Louise M. Development of a scoring system for the children's form of the Blacky Pictures. *Dissertation Abstracts*, University of Michigan, 1956.

Major objective was to explore the possibility of developing an objective scoring system for research use of the BP. The study made use of two groups of school children in the third and fourth grades. First group was 30 boys and 30 girls. A cross-validation sample of 40 children was used. The sources of criterion data were a number of diverse measures. In conclusion, it appeared that routine school measures of the type employed in the study can be used to derive behavioral criteria for research on psychoanalytic theory. (Publication No. 19,728)

133. Winter, W.D. The prediction of life history data and personality characteristics of ulcer patients from responses to the Blacky Pictures. *Dissertation Abstracts*, University of Michigan, 1954.

On the basis of earlier findings, the BP were examined and those responses most characteristic of each pers. pattern in pts. with peptic ulcers were selected. The items were then combined into two scales, designated as "Primary" (P) and "Reactive" (R). Briefly, the P scale describes an ind. who is overtly dependent, demanding, disgruntled, and immature. The R scale measures the pattern more typically thought to be characteristic of ulcer pts.: overt self-sufficiency, high drive to achieve, and little ability to tolerate their own passive-dependent needs. Ss were 68 male veterans with duodenal ulcers. Of the 43 predictions made, 20 were significant at the .10 level or better. High scores on the P scale were found to be related to the following variables from the Rorschach: *FM*, *H%*, *R*, *M*, *M*Σ*C*, non-constricted record, awareness of conflict, and more personality assets; high scores were also positively related to service prior to WWII, combat experience, and food rejection as determined from the VA records. Low scores on the P scale were found to be related to $\xi C > M$; and to

completion of high school, perseverance in training, high occupational level, high service rank, short height, and short-thin body build. High scores on the R scale were found to be related to high number of shading responses; and to high educational level, high occupational level, keeping appointments, anal symptoms, food rejection, skin symptoms, and thin body build. Low R scores were related to *CF*, *CF + C*, and *m* on the Rorschach, and to chronic overweight. Two general conclusions can be drawn from the study. (1) The "typical" ulcer pers. is not found in all peptic ulcer pts. (2) At least two different pers. patterns are found in people with ulcers, and these can be validly measured by the B scales developed in the investigation. (Publication No. 7767)

134. Winter, W.D. Two personality patterns in peptic ulcer patients. *Journal of Projective Techniques*, 1955, 19, 332-344.

A study of 68 peptic ulcer patients, using the Rorschach and Blacky Pictures to test hypotheses about the personality dynamics of ulcer patients, led to the conclusion that "the 'typical' ulcer personality is not found in all peptic ulcer patients," and that "at least two different personality patterns are found in people with ulcers, and these can be validly measured by the Blacky scales developed in this investigation." (*Psychol. Abstr.*, 1956, 30, No. 5075)

135. Wirls, C. Personality and breast feeding. Doctoral dissertation, Western Reserve University, 1957.

136. Wolfson, W., & Wolff, Frances. Sexual connotations of the name Blacky. *Journal of Projective Techniques*, 1956, 20, 347.

In this study it was shown that the dog name 'Blacky' by itself, was not sexually neutral as Blum implied but that 'Blacky' was predominantly male in connotation irrespective of the sex of the rater. This held for psychiatric patients as well as normals. No attempt was made to see how much of a factor this was in the actual utilization of the Blacky Pictures." (*Psychol. Abstr.*, 1957, 31, No. 6150)

137. Zucker, R. Agreeing response set and defense preference. Unpublished study-copies available from the author.

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Six Constructs to Define Rorschach M

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Summary: Six constructs for defining Rorschach human movement or M have been presented in terms of replicated research findings. These constructs are delay, time sense, intelligence, creativity, fantasy, and interpersonal relations. The human movement determinant was described on the basis of these six constructs. Research using the Brunswik Lens Model paradigm was cited to illustrate the simultaneous validation of the six constructs and their relative contributions to M.

Psychology as profession and science has been kind to clinicians employing the Rorschach technique. We have been permitted to indulge in naive empiricism, a belief in face validity, and reliance upon experience with gut or head. The current generation of students of assessment cannot generate much real concern with this philosophy of interpretation. Their training has been in scientific methodology and its application. They react to traditionalism in Rorschach interpretation with disbelief, roleplaying, and anxiety. Often the instructor represents the new generation; he will minimize projective techniques altogether. As a direct consequence the use of projective techniques, especially the Rorschach, is waning.

This paper presents a methodology for uncovering an empirical foundation for interpretation of separate Rorschach determinants. Briefly, a construct validation paradigm is used to present chains of replicated relationships which can be developed into networks of interpretive statements. The purpose here is to provide a set of reliable constructs to define and describe M, or Rorschach human movement. Each of these proposed constructs has been positively and significantly related to M by a variety of designs across subject populations. It should be noted that this procedure does some violence to Rorschach's intent, a clinical process of dealing with relationships among dimensions of variation for one person. A normative preoccupation inevitably replaces an implicit ipsative concern.

Six Constructs

Table 1 outlines the evidence for the

six constructs with which M has been identified: delay, time sense, intelligence, creativity, fantasy, and interpersonal relations. In this table some 95 findings from approximately 60 studies are treated; as many more studies have been excluded for reasons of relevance or methodology and dealt with elsewhere in detail (Dana, 1967). This table is concerned with specific tasks which define each construct, listed on the horizontal dimension, and with studies, indicated vertically, employing these tasks to delineate syndromes or concomitant personality characteristics and their correlates. Some relationships between constructs are defined by factor analytic studies but these obtain primarily between delay and time sense (e.g., Singer, Wilensky, & McCraven, 1956). The most salient data from this table concerns the number of replications, largely systematic replications, with specific M-related tasks.

Delay

For the delay construct a relatively strict adherence to task definition, motor or cognitive inhibition, is usually required for replication to occur. The most general definition of motor inhibition, tolerance for delay, which has been consistently associated with M, has involved a fifteen minute wait (Singer & Herman, 1954; Singer & Spohn, 1954), or walking then "freezing" in an awkward position (Singer, Meltzoff, & Goldman, 1952). A specific definition of motor inhibition is inhibition of writing behavior by directions emphasizing slowness and restricted conditions (Levine, Spivack, Fuschillo & Tavernier, 1959; Meltzoff, Singer, & Korchin, 1953; Meltzoff & Levine, 1954; Singer & Her-

Table 1
Relationship of Rorschach M to Variables Defined by Specific Tasks (Horizontal Dimension) and Task-Correlates
(Vertical Dimension) with Numbers of Replicated Studies in Parentheses.

Variable	Task(s)/Variables
Delay	INHIBITION: MOTOR (10) → COGNITIVE (6)
Time Sense	<p>ACCURACY OF ESTIMATION (5) → TIME CONCEPTION → STORY COMPLETION → TIME METAPHOR (1)</p> <p>↓</p> <p>QUESTIONNAIRE (2)</p> <p>↓</p> <p>Children's preference for delayed, larger rewards (2+)</p> <p>↓</p> <p>Social class (2)</p> <p>↓</p> <p>Delinquency (4) Treatment Syndromes: Foresight vs. Hindsight</p> <p>↓</p> <p>Adolescence (3)</p> <p>↓</p> <p>College Students (2) Personality Syndromes: Foresight vs. Hindsight</p> <p>↓</p> <p>Psychopathology (2) Punctual vs. Procrastinating</p>
	<p>neurotics/psychotics } a. ordering } b. length } c. activity } — sensorimotor } personality types — conceptual }</p>
Intelligence	Wechsler, 12-15 pts. (3); modest but significant correlations, all tests (20+); independent M factor (4).
Creativity	(5)
Fantasy	<p>DAYDREAMING (F) (1) → DREAM RECALL (1)</p> <p>↓</p> <p>recall of night dreams (1) → DREAM TIME (1)</p> <p>↓</p> <p>storytelling creativity</p> <p>↓</p> <p>n Ach</p> <p>↓</p> <p>admission of guilt/conflict</p> <p>↓</p> <p>divergent thought productivity (1) •</p> <p>↓</p> <p>attention; curiosity</p> <p>↓</p> <p>INTERPERSONAL ORIENTATION (5) → SOCIAL INTERESTS (2) → BEHAVIOR PERCEIVED ACCURATELY (1)</p> <p>↓</p> <p>— ability to conceptualize interpersonal relations, espec. of parents</p> <p>↓</p> <p>Kagan: "humanized interpretation" (7)</p> <p>↓</p> <p>— conceptualize social stimuli in terms of affect states</p>

man, 1954; Singer & Spohn, 1954; Singer, Wilensky, & McCraven, 1956). These definitions of motor inhibition, general and specific, have been employed in various designs with college students, disturbed adolescents, and schizophrenics.

Cognitive inhibition in these same populations has been defined by the time interval difference between paired associates learned to criterion and response with any word other than the learned associate (Levine & Meltzoff, 1956; Levine, Glass, & Meltzoff, 1957; Levine, Spivack, Fuschillo, & Tavernier, 1959; Meltzoff & Levine, 1954). A second definition has been provided by the Stroop Color-Word Test: color names are read from a black and white card whereupon the subject is asked to name colors of ink from incongruent color names and hues (Spivack, Levine, & Sprigle, 1959). A third definition has been reversal of the mirror-image N on the Digit Symbol Test (Levine, Glass, & Meltzoff, 1957), although this definition has failed to replicate (Fager, 1960). The issue of generality among different task definitions of motor or cognitive inhibition has not been settled (Neel, 1960; Willner & Belmont, 1964), and there are no consistently replicated correlates of these motor and cognitive inhibition tasks.

Time Sense

The time sense construct, however, apparently does not demand rigorous task duplication. Time sense has been measured in relation to *M* for these same populations by accuracy of time judgment (Kurz, Cohen, & Starzynski, 1965; Levine & Spivack, 1959; Singer, Wilensky, & McCraven, 1956; Spivack, Levine & Sprigle, 1959; Levine, Spivack, Fuschillo, & Tavernier, 1959), a Time Conception Questionnaire (Levine & Spivack, 1959; Levine, Spivack, Fuschillo, & Tavernier, 1959), a Story-Completion task (Kahn, 1967), and a Time-Metaphor Test (Kurz, 1963).

There is little dependence upon task articulation for the obtained relationships with *M*; all of the above task definitions are consistently related to *M*. This consideration is important because most studies indicating test correlates or syndromes of associated personality characteristics

use the Story-Completion task which is represented in relationship to *M* by a single unreplicated study (Kahn, 1967). This task demands two projective stories, one elicited without structure and the other following specifications of a time by the examiner. This latter definition is properly referred to as the Story-Completion task and has been used by LeShan (1952), Teahan (1958), and Wallace (1956) to provide correlates. The linkage here is via this unreplicated task as well as stories in response to TAT or TAT-derived cards, with or without specified time referents in directions. However, it is important to indicate that story completions or stories to picture stimuli when categorized and scored for a time dimension do give consistently comparable results.

If this linkage is accepted, then a detailed knowledge of the time sense-control system and related behaviors for delinquent adolescents follows (Brandt & Johnson, 1955; Davids & Parenti, 1958; Davids, Kidder, & Reich, 1962; Ricks, Umbarger, & Mack, 1964). Similarly, there is a developmental picture for acquisition of controls and socialized behaviors. Epley and Ricks (1963) found that a developed time sense or span was related to interpersonal involvement, need for achievement, and the presence of anxiety. Syndromes labeled as *foresight* (e.g., clear goals, strong defenses, orderly and logical thought, freedom from anxiety, resolution of identity crises, and emotional responses with control and depth), and *hindsight* (e.g., narcissism, creativity, spontaneity, good human relations, suppression of anger, intro-punitive, protected) are visible across populations differing in age, known delinquency, and intelligence (Epley & Ricks, 1963; Ricks, Umbarger, & Mack, 1964).

Story-completions of punctual and procrastinating college male participants in required, course-related research differ significantly: punctual students have greater prospective time spans (Blatt & Quinlan, 1967). Punctual students have better planning ability as suggested by significantly higher WAIS Picture Arrangement subtest scores, although the two groups were matched for WAIS Vocabulary and Information subtests. The kinds of

errors made on the Picture Arrangement subtest suggest control-impulsiveness differences between groups in the expected direction. Finally, the Stroop Color-Word Test distinguished between groups. Subjects who perform well on the Color-Word test, a cognitive inhibition task definition, also have longer prospective time spans, a delay task definition. These results suggest a positive relationship between the delay and time sense constructs.

The psychopathology studies permit a description of the time field within populations where this time field is limited or distorted (Stein & Craik, 1965; Wallace, 1956). Of especial interest here is the relationship to activity interest patterns as representative of associated personality types, conceptual and sensorimotor (Stein & Craik, 1965). Ideas and thoughts are differentially related to copying behaviors as a function of personality type by means of time sense usage, an *M* dimension.

One set of correlates for accuracy of time estimation is a preference for delayed and larger rewards (Mischel, 1961). Mischel and Metzner (1962), in a series of studies, found that social responsibility, need for achievement, "nay saying" and a father present in the home are related to preference for delay and larger rewards for children in a variety of cultures.

Intelligence

The association of *M* with intelligence, a modest but significant correlation, has been repeatedly noted (e.g., 20 studies cited in Levine, Spivack, & Wight, 1959). A variety of factor analytic studies have described the *M*-intelligence relationship by means of a separate factor containing other Rorschach variables in addition to *M* (Borgatta & Eschenbach, 1955; Consalvi & Canter, 1957; Lotsof, 1953; Williams & Lawrence, 1953). The finding of a 12 - 15 point difference between high and low *M* groups has been replicated repeatedly (e.g., Levine, Glass, & Meltzoff, 1957; Levine, Spivack, Fuschillo, & Tavernier, 1959; Spivack, Levine, & Sprigle, 1959).

Creativity

Only for the construct creativity is the evidence tenuous, equivocal, and mislead-

ing. There are, however, solid reasons for this condition. Rorschach defined creativity as a concomitant of *Erlebnistypus*, or experience-type, changing with the experience balance and determined by it. He posited that there were no unit talents, definable as such from any single determinant. Nonetheless, *M* has been equated with creativity for research purposes. In addition, our generation has tended to define creativity as disciplined thought, especially scientific innovation (Stark, 1965). It is not surprising that *M* and creativity have been found to be unrelated (Griffin, 1958; Roe, 1946; Rust, 1948). When artistic talent is the criterion for creativity, positive results obtained (Herish, 1962). Similarly, with use of intuition and perception scores from the Myers-Briggs Type Indicator to define creativity, positive results occur (Richter & Winter, 1966). Thus, a criterion problem interacts with a belief in a unitary Rorschach dimension to produce these equivocal results.

Fantasy

Fantasy has been defined in direct relation to *M* by daydreaming (Page, 1957), dream recall and total dream time (Orlinsky, 1966). Daydream frequency, as measured by two different questionnaires (Page, 1957; Singer & Schonbar, 1961) is related to divergent thought productivity, attention, and curiosity (Singer & Antrobus, 1963), to storytelling creativity, need for achievement, willingness to admit anxiety and conflict, and recall of night dreams (Singer & Schonbar, 1961). The presence of "recall of night dreams" as a daydream frequency correlate as well as a direct *M* correlate, provides an indirect replication.

Dream recall frequency is an indicator of a generalized awareness, an accessible inner life (Schonbar, 1965). Those who frequently recall dreams, recallers, use inner resources for interpretation of experience and coping, have high needs for achievement and affiliation, use repression minimally, are aware of anxiety and relatively insusceptible to deception by appearances, have a flexible and creative self-enrichment, and are in greater control of their own lives (Singer & Schonbar, 1961).

Fantasy has also been defined indirectly in relation to *M* by sleep deprivation (Love-land & Singer, 1959; Palmer, 1963) and by dream deprivation (Lerner, 1966). *M* increases dramatically with sleep or dream deprivation.

In a review of dream function which employs a method similar to the present paper, Lerner (1967) documents hypotheses which add additional correlates of dreaming, or dream time. The logic of her review suggests that dreaming, and hence *M*, is functional for maintaining personality organization. Dreaming re-integrates fantasies into the body which cannot be acted upon physically in waking life and strengthens the body image by providing a unique condition for the occurrence of kinesthetic fantasy. Documentary evidence collated from physiological dream research, Rorschach, and sensory deprivation studies suggests that body image is strengthened in the presence of dreams and weakened by dream absence.

Interpersonal relations

The interpersonal relations construct has an apparent flimsiness which is belied by the actual consistency of findings. The often replicated relationships with *M* are within several related clusters, an interpersonal orientation (Hertzman & Pearce, 1947; King, 1958; Shatin, 1955) which is described by an ability to conceptualize interpersonal relations, especially with parents (Singer & Sugarman, 1955), a variety of social interests (Fernald & Linden, 1966; Schwartz, 1952), and being perceived accurately by others (Mueller & Abeles, 1964). These results are independent of the particular tasks and research designs.

Similarly, a Kagan-created coherence among seemingly disparate findings (Bieri & Blacker, 1956; King, 1958; Shatin, 1958; Singer, Wilensky & McCraven, 1956), has viability from three careful sets of empirically tested deductions (Kagan, 1961). The ability to conceptualize social stimuli in terms of affect states is treated as equivalent, if not identical, to an interpersonal orientation. A humanized interpretation of experience appears to be the basis for an interpersonal orientation.

An Empirically-Derived Description of *M*

The six constructs used to describe *M* are differentially replicated and provided with personality correlates. Nonetheless, there appears to be sufficient data to constitute a tentative description of *M* for purposes of clinical interpretation.

M is a syndrome of potentials, capacities for reaching out into the environment in a variety of ways. The ability to focus attention, to delay before having to act, provides a context for the development of a time sense. A locus for the self is found within a time continuum that has directionality, length, and organization. This makes possible a defined past, present, and future. There is sufficient time for planning, reasoning, problem-solving by intellectual means, and the learning of specific skills. These characteristics of delay and anticipation, planning and means-end activity, describe the secondary process. Intellectual defenses may also be acquired and employed. Past experience may be used in memory, or symbolized in fantasy, dreams, and concept-formation, particularly by means of achievement fantasy. Anxiety or conflict, when present, is conscious and available for constructive utilization. Ego controls may be developed such that the individual not only directs his own life but also develops a sense of who he is, or identity, and the possibilities of self-maintaining or self-enhancing behaviors and subsequent personality growth. As a result of increased opportunity for acquisition of the content of the culture, tested intelligence is higher.

Clearly, when these potentials are given some tangible expression in the person's behavior, they do provide a basis for caring about other persons. This constitutes a humanized interpretation of the world, a combination of feeling and persons which can make for relationships with depth, stability, and meaning.

M alone, however, does not suggest the manner or extent to which these potentials are utilized in everyday living. *M* may be defined from these evidences as the capacity for humanization or personhood.

One Construct Validation

Direct empirical validation of these six

constructs in terms of their relative contribution to M has been accomplished using a Brunswik Lens Model paradigm (Dana & Cocking, in press). The distal quality, or criterion, was a normal distribution of 45 M percentage scores from college women with number of responses and age controlled. Each of these 45 subjects was then individually administered a test battery composed of these six constructs rendered as nearly equivalent to the original tasks as feasible. These data for each subject were presented in a context of their means and sigmas to 12 judges, doctoral candidates in counseling or clinical psychology. The judges subjectively weighted each of the six scores per subject as proportions of 100 and on this basis predicted the total M percentage.

From the test data for these six constructs the judges can make significantly accurate predictions of M percentage. However, four of the six separate, subjective estimates are unrelated to criterion M with only intelligence and fantasy being significantly related to M . The subjective weights are in moderate accord with the objective test scores for five of the six constructs ($p < .01$), excluding only time estimation, indicating that the judges organize cues into judgments which are consistent with the criterion variables. Finally, five of six objective renderings of the constructs are significantly related to M percentage ($p < .01$). The sixth construct, interpersonal relations, may have been inadequately measured by the manner in which relevant tasks were presented.

The two salient findings are the positive relationships of the constructs to an independently obtained and normally distributed set of M percentages and the ability of the judges to go somewhat beyond their own subjective usage of the six constructs to valid predictions of M percentage. It is encouraging that the majority of these neophyte clinical judges are significantly accurate in the absence of any direct or constructive knowledge of the empirical literature. Since few Rorschach students currently receive formal training in the meaning of estimated time intervals, it remains to be seen what the experienced clinical judge, informed of the relevant empirical literature, can accomplish with

the same demand for predictions of M percentage. Findings of this nature offer tangible solace for the clinician who finds credible the face validity of Rorschachiana. In addition, an empirical base for Rorschach M interpretation is now feasible. Cross-validation on different subject populations is mandatory, especially with respect to psychopathology, sex, and social class.

REFERENCES

- Barndt, R.J. & Johnson, D.M. Time orientation in delinquents. *Journal of Abnormal and Social Psychology*, 1955, 51, 343-345.
- Bieri, J., & Blacker, E. The generality of cognitive complexity in the perception of people and ink blots. *Journal of Abnormal and Social Psychology*, 1956, 53, 112-117.
- Blatt, S.J., & Quinlan, P. Punctual and procrastinating students: A study of temporal parameters. *Journal of Consulting Psychology*, 1967, 31, 169-174.
- Borgatta, E.F., & Eschenbach, A.E. Factor analysis of Rorschach variables and behavioral observation. *Psychological Reports*, 1955, 1, 129-136.
- Consalvi, C., & Canter, A. Rorschach scores as a function of four factors. *Journal of Consulting Psychology*, 1957, 21, 47-51.
- Dana, R.H. Rorschach human movement. Unpublished manuscript, University of Wyoming, 1967.
- Dana, R. H., & Cocking, R. R. Cue parameters, cue probabilities, and clinical judgment. *Journal of Clinical Psychology*, in press.
- Davids, A., & Parenti, A. N. Time orientation and interpersonal relations of emotionally disturbed and normal children. *Journal of Abnormal and Social Psychology*, 1958, 57, 299-305.
- Davids, R. A., Kidder, C., & Reich, M. Time orientation in male and female juvenile delinquents. *Journal of Abnormal and Social Psychology*, 1962, 64, 239-240.
- Epley, D. & Ricks, D. Foresight and hindsight on the TAT. *Journal of Projective Techniques*, 1963, 27, 51-59.
- Fager, R. Relation of Rorschach movement and color responses to cognitive inhibition. *Journal of Consulting Psychology*, 1960, 24, 276.
- Fernald, P.S., & Linden, J.D. The human content response in the Holtzman inkblot technique. *Journal of Projective Techniques & Personality Assessment*, 1966, 30, 441-446.
- Griffin, D.P. Movement responses and creativity. *Journal of Consulting Psychology*, 1958, 22, 134-136.

- Hersh, C. The cognitive functioning of the creative person: a developmental analysis. *Journal of Projective Techniques*, 1962, 26, 193-200.
- Hertzman, M., & Pearce, J. The personal meaning of the human figure in the Rorschach. *Psychiatry*, 1947, 10, 413-422.
- Kagan, J., Stylistic variables in fantasy behavior: the ascription of affect states to social stimuli. In J. Kagan & G. Lesser (Eds.) *Contemporary Issues in Thematic Apperceptive Methods*. Springfield, Ill.: C.C. Thomas, 1961.
- Kahn, P. Time span and Rorschach human movement response. *Journal of Consulting Psychology*, 1967, 31, 92-93.
- King, G. A theoretical and experimental consideration of the Rorschach human movement responses. *Psychological Monographs*, 1958, 72 (5), Whole No. 458.
- Kurz, R.B. Relationship between time imagery and Rorschach human movement responses. *Journal of Consulting Psychology*, 1963, 27, 273-276.
- Kurz, R.B., Cohen, R., & Starzynski, S. Rorschach correlates of time estimation. *Journal of Consulting Psychology*, 1965, 29, 379-382.
- Lerner, B. Dream function reconsidered. *Journal of Abnormal Psychology*, 1967, 72, 85-100.
- Lerner, B. Rorschach movement and dreams: A validation study using drug-induced deprivation. *Journal of Abnormal Psychology*, 1966, 71, 75-87.
- LeShan, L.L. Time orientation and social class. *Journal of Abnormal and Social Psychology*, 1952, 47, 589-592.
- Levine, M., Glass, H., & Meltzoff, J. The inhibition process, Rorschach human movement responses, and intelligence. *Journal of Consulting Psychology*, 1957, 21, 41-45.
- Levine, M., & Meltzoff, J. Cognitive inhibition and Rorschach human movement responses. *Journal of Consulting Psychology*, 1956, 20, 119-122.
- Levine, M., & Spivack, G. Incentive, time conception and self-control in a group of emotionally disturbed boys. *Journal of Clinical Psychology*, 1959, 15, 110-113.
- Levine, M., Spivack, G., Fuschillo, J., & Tavernier, A. Intelligence and measures of inhibition and time sense. *Journal of Clinical Psychology*, 1959, 15, 224-226.
- Levine, M., Spivack, G., & Wight, B. The inhibition process, Rorschach human movement responses and intelligence: Some further data. *Journal of Consulting Psychology*, 1959, 23, 306-312.
- Lotsof, E.J. Intelligence, verbal fluency, and the Rorschach test. *Journal of Consulting Psychology*, 1953, 17, 21-24.
- Loveland, N.T., & Singer, M.T. Projective test assessment of the effects of sleep deprivation. *Journal of Projective Techniques*, 1959, 23, 323-334.
- Meltzoff, J., & Levine, M. The relationship between motor and cognitive inhibition. *Journal of Consulting Psychology*, 1954, 18, 355-358.
- Meltzoff, J., Singer, J.L., & Korchin, S.J. Motor inhibition and Rorschach movement responses: A test of the sensory tonic theory. *Journal of Personality*, 1953, 21, 400-410.
- Mischel, W. Preference for delayed reinforcement and social responsibility. *Journal of Abnormal and Social Psychology*, 1961, 62, 1-70.
- Mischel, M., & Metzner, R. Preference for delayed reward as a function of age, intelligence, and length of delay interval. *Journal of Abnormal and Social Psychology*, 1962, 64, 425-431.
- Mueller, W.J., & Abeles, N. The components of empathy and their relationship to the projection of human responses. *Journal of Projective Techniques and Personality Assessment*, 1964, 28, 322-330.
- Neel, A.F. Inhibition and perception of movement on the Rorschach. *Journal of Consulting Psychology*, 1960, 24, 224-230.
- Orlinsky, D.E. Rorschach test correlates of dreaming and dream recall. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 250-253.
- Page, H.A. Studies in fantasy-daydreaming frequency and Rorschach scoring categories. *Journal of Consulting Psychology*, 1957, 21, 111-114.
- Palmer, J.O. Alterations in Rorschach's experience balance under conditions of food and sleep deprivation: A construct validation study. *Journal of Projective Techniques*, 1963, 27, 208-213.
- Richter, R.H., & Winter, W.D. Holtzman ink-blot correlates of creative potential. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 62-67.
- Ricks, D., Umbarger, C., & Mack, R. A measure of increased temporal perspective in successfully treated adolescent delinquent boys. *Journal of Abnormal and Social Psychology*, 1964, 69, 685-689.
- Roe, A. Artists and their work. *Journal of Personality*, 1946, 15, 1-40.
- Rust, R.M. Some correlates of the movement response. *Journal of Personality*, 1948, 4, 369-401.

- Schonbar, R.A. Differential dream recall frequency as a component of "life style." *Journal of Consulting Psychology*, 1965, 29, 468-474.
- Schwartz, M.M. The relationship between projective test scoring categories and activity preferences. *Genetic Psychology Monographs*, 1952, 46, 133-181.
- Shatin, L. Relationships between the Rorschach test and the Thematic Apperception Test. *Journal of Projective Techniques*. 1955, 19, 317-331.
- Shatin, L. The constriction-dilation dimension in Rorschach and TAT. *Journal of Clinical Psychology*, 1958, 14, 150-154.
- Singer, J. L., & Antrobus, J. S. A factor-analytic study of day dreaming and conceptually-related cognitive and personality variables. *Perceptual and Motor Skills*, 1963, 17, 187-209.
- Singer, J.L., & Herman, J. Motor and fantasy correlates of Rorschach human movement responses. *Journal of Consulting Psychology*, 1954, 18, 325-331.
- Singer, J.L., & Schonbar, R.A. Correlates of daydreaming: a dimension of self-awareness. *Journal of Consulting Psychology*, 1961, 25, 1-6.
- Singer, J.L., & Spohn, H.E. Some behavioral correlates of Rorschach's experience type. *Journal of Consulting Psychology*, 1954, 18, 1-9.
- Singer, J.L., & Sugarman, D. Some TAT correlates of Rorschach human movement responses. *Journal of Consulting Psychology*, 1955, 19, 117-119.
- Singer, J.L., Meltzoff, J., & Goldman, G.D. Rorschach movement responses following motor inhibition and hyperactivity. *Journal of Consulting Psychology*, 1952, 16, 359-364.
- Singer, J.L., Wilensky, H., & McCraven, V.G. Delaying capacity, fantasy, and planning ability: A factorial study of some basic ego functions. *Journal of Consulting Psychology*, 1956, 20, 375-383.
- Spivack, G., Levine, M., & Sprigle, H. Intelligence test performance and the delay function of the ego. *Journal of Consulting Psychology*, 1959, 23, 428-431.
- Stark, S. An essay on romantic genius, Rorschach movement, and the definition of creativity. *Perceptual and Motor Skills*, 1965, 20, 409-418.
- Stein, K. B., & Craik, K. H. Relationships between motoric and ideational activity preference and time perspective in neurotics and schizophrenics. *Journal of Consulting Psychology*, 1965, 29, 460-467.
- Teahan, J. E. Future time perspective, optimism, and academic achievement. *Journal of Abnormal and Social Psychology*, 1958, 57, 379-380.
- Wallace, M. Future time perspective in schizophrenia. *Journal of Abnormal and Social Psychology*, 1956, 52, 240-245.
- Williams, H. L., & Lawrence, J. F. Further investigation of Rorschach determinants subjected to factor analysis. *Journal of Consulting Psychology*, 1953, 17, 261-264.
- Willner, A., & Belmont, I. Relation of motor performance to perceived movement in Rorschach inkblots. *Perceptual and Motor Skills*, 1964, 19, 675-684.

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Apache "Learners" and "Nonlearners."

II. Quantitative Rorschach Signs of Influential Adults¹

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Summary: Aboriginally probably equivalent, following divergent acculturative patterns, the perceptual and cognitive techniques of the Chiricahua and Mescalero Apaches differed. Today, half of Apache children (the learners) adjust to ordinary expectations in grammar school: their Rorschach patterns resemble those of aged Chiricahuas; half (the nonlearners) fail to adjust: their responses are those of the less-acculturated Mescaleros.

It was hypothesized that the learners would have identified with the techniques of the more-acculturated Chiricahuas. Adults influential in the early lives of the children were tested. The hypothesis as stated was not verified. What was consistent in the responses of learner influentials was a more balanced approach to Rorschach stimuli than was shown by nonlearner influentials.

The Apaches of the Mescalero Indian Reservation consist largely of Mescaleros and Chiricahuas and their progeny who have intermarried with individuals of those groups, Indians of other tribes, Mexican-Americans and Caucasians.²

The Reservation was established in 1873 for the Mescalero Tribe, in the heartland of their aboriginal operations. In 1886 the Chiricahuas were taken as prisoners of war and held that status until 1913, when they were freed and many chose to join the Mescaleros on the Reservation. The processes of acculturation to which the two tribes were subjected were sharply different. The tribes were genetically similar and their social structures and socialization processes were almost identical (Basehart 1959, 1960; Opler 1933; Shepardson 1963, pp. 6-8; Thomas 1959a, 1959b). It has been assumed that their personality structures were also very similar before their subjection by the whites (L.B. Boyer 1964). However, following their

differing processes of acculturation, the personality structures of the old people of the two tribes differed in manners which have been demonstrated clinically and by examination of Rorschach protocols (Boyer & Boyer, 1967a, 1967b, 1967c; Boyer, Klopfer, Boyer, Brawer and Kawai, 1965a, 1965b) and it has been found that the effects of acculturation have been less disruptive to the personality organization of the aged Mescaleros and Chiricahuas than to middle-aged and young-aged individuals (Boyer, Boyer, Brawer, Kawai, & Klopfer, 1964). The aged Chiricahuas had assumed attitudes and developed perceptive and cognitive orientations tending to resemble those of low and lower middle class economic groups. We have attributed this change to their having, as young children, identified with their soldier-captors (Boyer & Boyer, 1967a, 1967b), employing an ego technique known as identification with the aggressor (Anna Freud, 1936).

On the Reservation today, children of five years of age are sent to kindergarten in schools run by the State of New Mexico. About half of the kindergarteners, the "learners," are deemed by their teachers to be able to adjust to the expected orientation of public schools and are advanced to the

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² A detailed presentation of the population of the Reservation as of 1959 appears in L. B. Boyer (1962: Appendix A).

first grade. The other half, the "nonlearners," are sent to a second year of kindergarten. In a previous study, the learners and nonlearners could be distinguished through examination of their Rorschach protocols (Boyer, Boyer, Kawai, & Klopfer, 1967). The nonlearners emphasized the inner world in their responses to the Rorschach stimuli as had the old - age Mescaleros, individuals of two and three generations removed, reacting in the "Mescalero Way." The learners fell into two groups. In the first, there was no discernible Mescalero Way. In the second, while the Mescalero Way was found, additional quantitative and qualitative phenomena indicated that there was a superimposed change of orientation in the direction of greater responsiveness to the outer world. That group was said to react in the "Converted Mescalero Way." Eighteen of 24 nonlearners responded only in gradations of the Mescalero Way but only 4 of 30 learners. This difference is highly reliable statistically, the level of significance being less than .001.

The anthropological author of the present communication has done an intensive study of the socialization processes of a series of representative families (R.M. Boyer, 1962). Among these matrilineal Apaches (R.M. Boyer, 1964), formal and informal socialization processes appear to be the same, regardless of the degree of Mescalero or Chiricahua heritage of the mother, so long as she spent her childhood on the Reservation. As mentioned above, the personality change observed in the aged Chiricahuas seemed to be explainable by the hypothesis that the children who were reared in prison

camps identified with the perceptual and cognitive methods of their captors and overseers. It is, then reasonable to extrapolate that during the socialization of the learners and nonlearners, the differences in their orientations could be explained similarly on the basis of the young children's having identified with the perceptual and cognitive techniques of significant persons in their home environments.

In the current contribution we test the hypothesis that the adults who were most influential in the lives of learners respond to Rorschach stimuli in a Chiricahua-like, relatively acculturated manner.

Sample

Rorschach protocols were obtained by the psychoanalytic author (L.B. Boyer) from 51 individuals who had been influential in the lives of 35 children whose learner - nonlearner status was known, and interpreted by the psychologists (Klopfer and Scheiner). Twenty - three were related to learners (here designated learner influentials), 17 to nonlearners (nonlearner influentials) and 11 to both learner and nonlearner children (mixed influentials). Protocols of natural parents and maternal grandparents were available in almost equal number for learners and nonlearners and provide essentially comparable samples of individuals influential in the lives of the learners and nonlearners, which serve as the core of data subjected to analysis.

Stepparents, uncles, aunts, close adult friends of the family and adult siblings are included under "Other Adults." Only sparing use was made of adolescent sibling data because adolescence as a developmental stage affects

Table 1
Kinship Status of Influentials

	Natural Parents		Maternal Grandparents		Other Adults	Sibs
	Mo	Fa	MoMo	MoFa		
Learner	5	3	2	4	3	6
Nonlearner	5	3	3	4	1	1
Mixed	1	3	2	2	1	2

Table 2
Age of Influentials

	L	NL	M		L	NL	M		L	NL	M
Mo 35 & over	1	3	1	Fa 35 & over	3	1	2	MatGp. over 60	1	4	2
Mo under 35	4	2	0	Fa under 35	0	2	1	MatGp. 60 & under	5	3	2

Note: L = Learner Influential, NL = Nonlearner Influential, M = Mixed Influential

responsiveness to Rorschach cards and because sibling influentials were disproportionately frequent for the learner children. Sibling influentials were used for age - grouped data, as presented in Tables 4 & 5, and in application of the final version of learner and nonlearner influential patterns, as shown in Table 6, under the heading "Total Sample."

The matrifocal pattern of Apache society is reflected in the survey of who is influential in the life of a child. In contrast to 18 maternal relatives on the grandparental level (17 maternal grandparents and 1 MoMoBro) stand three paternal relatives (one each: FaMo, FaSis, FaFa) (See Table 1).

Although there are some differences in the age distribution of influentials of the learner, nonlearner and mixed groups, these do not attain statistical significance (see Table 2). There is, however, a tendency for the mothers and grandparents of learners to be younger than those of non-learners whereas the contrary holds in regard to fathers.

The majority of the influentials were ethnically heterogeneous, reflecting the degree of intermarriage between Mescaleros and Chiricahuas with each other, Indians of other tribes, Anglos and Mex-

ican-Americans (see footnote 2). There was a greater proportion of ethnic homogeneity among the mixed influentials. "Pure" Mescaleros were found with approximately equal frequency among the three groups of influentials, but "pure" Chiricahuas appeared almost exclusively among the learner and mixed influentials (see Table 3).

Methodology

Only those quantitative criteria differentiating between the old-age Mescaleros and Chiricahuas which have reference to standard quantitative Rorschach scoring were used (Ainsworth & Klopfer 1954); the qualitative context in which these features occurred was not examined in this preliminary study. The protocols of the influentials were examined in regard to seven of the ten criteria which had been found to be significant in the study of the old-age Mescaleros and Chiricahuas (Boyer, Klopfer, Boyer, Brawer & Kawai, 1965a). The protocol of each influential was scored on the basis of the presence of each Chiricahua-like trait. Thus, within a potential range of zero to seven, the higher the score the more the Rorschach response resembles that of the aged Chiricahuas. Each of the following traits was

Table 3
Cultural Background of Influential Adults

	Learner Influentials		Nonlearner Influentials		Mixed Influentials	
	(N=17)	100%	(N=16)	100%	(N=9)	100%
Mescalero	(5)	29%	(4)	25%	(4)	44%
Chiricahua	(3)	18%	(1)	6%	(3)	33%
Other	(1- Navaho)	6%	(1- Lipan)	6%	—	—
Combined	(8)	47%	(10)	62%	(2)	22%

scored one point when present in the record of an influential:

- 1) *R* 16 or more responses
- 2) *D%* Large detail equal to or greater than 60%
- 3) *F%* Pure form responses equal to or greater than 20%
- 4) *A%* Percentage of responses with animal content equal to or greater than 56%
- 5) *FC* The presence of one or more form-color responses
- 6) *FC: CF+C* Form-dominated color responses equal to or greater than color-dominated
- 7) *Fc* Fewer than two responses using shading.

Findings

The protocols of learner influentials cannot be differentiated from those of nonlearner influentials on the basis of total score (i.e., the total number of Chiricahua - like traits) (See Table 4). Moreover, the range of scores as well as their distribution tended to be roughly the same in each comparable sub - group of learner and nonlearner influentials. The scores of the mothers of learners ranged from 1 to 6 and those on nonlearners from 1 to 7. The scores of parental influentials showed a wider range (1 to 7) than those of grandparents (2 to 6), and nonlearner grandparental influentials varied more (2 to 6) than the learner grandparents (2 to 4). Learner parents have a higher mean score than learner grandparents, while the reverse holds among mixed influentials and, to a lesser degree, among nonlearner influentials.

A slight tendency for score to be related to age is found among male and learner influentials in contrast to women

and the other two groups of influentials: the older the person, the lower and less Chiricahua - like the score. None of these comparisons approaches statistical significance (See Tables 5 & 6).

Turning from the examination of total scores to the individual criteria, we note that no single criterion differentiates significantly between the learner and nonlearner influentials (See Table 7).

Similarly, the distribution of individual criteria by sex and kinship status reveals no significant differentiation (See Tables 8 & 9).

However, when the influentials are divided into high and low scorers (i.e., when the overall Chiricahua or Mescalero orientation is held constant) certain criteria reveal a tendency to differentiate between learner and nonlearner influentials in one or the other orientation group. The directions in which the individuals differ vary: learner influentials at times demonstrate a Chiricahua - like characteristic, as in the number of responses, and at other times the absence of such a trait, as in *D%*. Nevertheless, even with this division of the sample, only two of the 14 relationships approach statistical significance (See Tables 10, 11 & 12).

On the other hand, certain consistencies in the data suggested that there were differences, but that the character of the differences would have to be sought in a more complex patterning of the relationship between the presence and absence of criteria. The combining of individual criteria was found to lead to significant results. While neither *R* nor *D%* served to distinguish between learner and nonlearner influentials, the combination of the first Chiricahua-like trait ($R \leq 16$) and the absence of the second

Table 4
Range and Mean Scores of Adult Influences

	Learner		Nonlearner		Mixed	
	(range)	mean	(range)	mean	(range)	mean
Parents	(1-6)	4.0	(1-7)	3.5	(2-5)	3.5
Maternal						
Grandparents	(2-4)	3.3	(2-6)	3.7	(3-6)	4.5
All Adults	(1-6)	3.65	(1-7)	3.75	(2-6)	4.33

Table 5
Range and Mean Scores of Influentials: by Age Categories

	60+		40-59		20-39		under 20	
	(range)	mean	(range)	mean	(range)	mean	(range)	mean
Men	(1-5)	2.77	(1-6)	3.75	(3-6)	4.25	(3-6)	4.60
Women	(1-6)	4.20	(2-5)	3.83	(1-7)	4.11	(3-5)	4.00
Learners	(1-3)	2.00	(4-6)	4.50	(1-6)	4.00	(4-6)	5.50
Nonlearners	(2-6)	4.25	(1-5)	3.00	(1-7)	4.00	(3)	3.00
Mixed	(2-6)	4.25	(3-4)	3.67	(2)	2.00	(3-6)	4.50

Table 6
High & Low Scoring Influentials: by Age Categories

Score	Learners		Nonlearners		Mixed	
	45+	25-44	45+	25-44	45+	25-44
4-7	4	7	4	5	5	1
0-3	5	1	4	3	2	1

Total Sample

	45+	25-44	Under 20
4-7	13	13	6
0-3	11	5	3

Table 7
Distribution of Individual Criteria
(Parents & Maternal Grandparents)

(1) R		(3) D%		(3) F%		(4) A%		(5) FC		(6) FC:CF+C		(7) Fc	
+	-	+	-	+	-	+	-	+	-	+	-	+	-
≥ 16	< 16	> 60	< 60	≥ 20	< 20	≥ 56	< 56	≥ 1	> 1	≥ FC	< FC	< 2	≥ 2
L	10 4	1 13	12 2	8 6	7 7	8 6	7 7	8 6	6 8				
NL	6 9	5 10	11 4	5 10	10 5	9 6	8 7						
M	6 2	2 6	6 2	3 5	6 2	5 3	5 3						

($D\% < 60$), did. That is, the pattern +1-2 differentiated learner from nonlearner influentials at the .05 level (See Table 12).

When the sample was separated into those with Chiricahua and Mescalero orientation and the combined criterion was applied to the divided sample, it was found that +1-2 differentiated at the .01 level among high scorers but did not distinguish between the categories of low-

scoring individuals. However, the use of color differentiated among low scorers. Among the Mescalero-oriented learner influentials $CF+C > FC$, a main FC response being absent altogether. This pattern (-5-6) is found in the Mescalero Way and appeared among less than a third of the low-scoring nonlearner influentials. The absence of color responses as well as $CF+C > FC$ in the presence of a main FC

Table 8
Distribution of individual criteria by Sex (prts & Grdprts)

		(1) R	(2) D%	(3) F%	(4) A%	(5) FC	(6) FC: CF+C	(7) Fc
L	Male	6 1	0 7	6 1	2 5	4 3	4 3	3 4
	Female	4 3	1 6	6 1	6 1	3 4	4 3	3 4
NL	Male	2 5	1 6	4 3	1 6	5 2	4 3	4 3
	Female	4 4	4 4	7 1	4 4	5 3	5 3	4 4
M	Male	3 2	1 4	5 0	3 2	3 2	4 1	3 2
	Female	3 0	1 2	1 2	0 3	3 0	1 2	2 1
All) Adults)	Male	11 8	2 17	15 4	6 13	12 7	12 7	10 9
	Female	11 7	6 12	14 4	10 8	11 7	10 8	9 9

Table 9
Distribution of individual criteria by Kinship status

		(1) R	(2) D%	(3) F%	(4) A%	(5) FC	(6)*	(7) Fc
L	Parents	6 2	1 7	7 1	6 2	4 4	5 3	3 5
	Grdprts	4 2	0 6	5 1	2 4	3 3	3 3	3 3
NL	Parents	4 4	2 6	6 2	2 6	4 4	5 3	5 3
	Grdprts	2 5	3 4	5 2	3 4	6 1	4 3	3 4
M	Parents	3 1	1 3	3 1	2 2	3 1	2 2	1 3
	Grdprts	3 1	1 3	3 1	1 3	3 1	3 1	4 0

* (6) FC:CF+C

Table 10
Distribution of Individual Criteria among High and Low Scorers

		(1) R	(2) D%	(3) F%	(4) A%	(5) FC	(6) FC:CF+C	(7) Fc
		+ -	+ -	+ -	+ -	+ -	+ -	+ -
4 ≤	L	8 1	1 8	8 1	6 3	7 2	8 1	3 6
	NL	3 5	5 3	8 0	4 4	7 1	7 1	6 2
	M	4 2	2 4	6 0	3 3	4 2	5 1	4 2
≤ 3	L	2 3	0 5	4 1	2 3	0 5	0 5	3 2
	NL	3 4	0 7	3 4	1 6	3 4	2 5	2 5
	M	2 0	0 2	0 2	0 2	2 0	0 2	1 1

Note: L:NL $p < .10$

response (+5-6) were found only in the records of nonlearner and mixed influentials of the core sample (See Table 12).

Thus, when we divide the sample into Chiricahua- and Mescalero-oriented influentials, we begin to identify a learner

pattern in each. Table 13 shows what happens when each influential is classified as to whether he shows the learner pattern for his particular scoring category (+1-2 for high scorers and -5-6 for low scorers). The resultant highly signifi-

Table 11
Distribution of Individual Criteria among High and Low Scorers
(Table 10 condensed)

	(1) R	(2) D%	(3) F%	(4) A%	(5) FC	(6) FC:CF+6	(7) Fc
	+ -	+ -	+ -	+ -	+ -	+ -	+ -
4 ≤ L	8 1	1 8	8 1	6 3	6 2	8 1	6 3
M & NL	7 7	7 7	14 0	7 4	11 3	12 2	10 4
≥ 3 L	2 3	0 5	4 1	2 3	0 5	0 5	3 2
M & NL	5 4	0 9	3 6	1 8	5 4	2 7	3 6

Table 12
Combined Criteria

	High Scorers			Low Scorers			All (prts & Grdprts)		
	L	NL	M	L	NL	M	L	NL	M
+1 (R = 16) & -2 (D% = 60%) all other	7	0	2**	2	3	2	9	3	4*
-5 (FC =) & -6 (CF+C FC) all other	1	0	0	5	2	0***	6	2	0
	8	8	6	0	5	2	8	13	8

* L:NL difference significant at $p < .05$; L:M & NL $p < .10$

** L:NL difference significant at $p < .01$; L:M & NL $p < .01$

*** L:NL difference significant at $p < .10$; L:M & NL $p < .05$

cant differences suggest that there is one learner pattern for the Mescalero- and another for the Chiricahua-oriented influentials, and that the Mescalero of Chiricahua orientation per se is not the crucial determinant.

One might argue that learner patterns should be applicable across the board if they are valid, and that the findings should not rest on arbitrary division of the sample. The criteria which differentiated learner from nonlearner influentials in the divided sample were examined in various combinations in an effort to determine any underlying phenomena (See Table 14). It was found that congruency between trait numbers 1 ($R \leq 16$) and 6 (CF+C ratio) is the best combination of two criteria which differentiates between influentials. In these aspects of productivity and response to color, crucial respectively to high and low scoring learner patterns, the learner influentials

showed either a consistent Mescalero-like (-1-6) or a consistent Chiricahua-like (+1+6) pattern.

Examination of the data suggested three patterns, each with its learner and nonlearner variant. We assume that the Rorschach characteristics of the old - age Chiricahua reflect greater acculturation and thus label the three patterns Dominant - Culture - Oriented, Transitional and Apache - oriented. Table 15 shows the nature of these patterns and their distribution in the adult sample.

This classification of learner and nonlearner patterns differentiates between learner and nonlearner influentials at a high level of statistical significance (See Table 16).

Discussion

The sample of children who comprised the learners and nonlearners stems from

families with varying ethnic mixtures. The modern socialization patterns of families with children of the ages of those in the sample reveal no distinguishing traits so long as the mother stems from a Mes-

calero or Chiricahua heritage; the same holds if the mother has some proportion of Mescalero or Chiricahua ethnic background (R.M. Boyer 1962).

The studies of the old - age Mescaleros

Table 13
Learner vs. Non-Learner Patterns
(Total-score related patterns)

	L	NL	M
Learner Pattern (+1-2 for hi scorers; -5-6 for low scorers)	12	2	2
Non-Learner Pattern (all other than above)	2	13	6

	L	Other *	L	Other **
Learner Pattern	12	4	13	4
Non-Learner Pattern	2	19	4	21

$$*X^2 = 13.88 \quad p < .001$$

$$**X^2 = 12.95 \quad p < .001$$

Table 14
Combined Criteria (undivided sample)

	+2-2	Other *	-5-6	Other	Other	+5-6 *
L	9	5	6	8	14*	0
M&NL	7	16	2	21	17	6

$$*p < .10$$

$$**p < .20$$

		All Adults					
		-1+6	Other	+1+6 -1-6	+1-6 -1+6	+1+6 -1-6	+1-6 -1+6
L		1	13	10	4	12	5
M&NL		9	14	7	16	8	17

$$*X^2 = 4.35 \quad p < .05$$

$$**X^2 = 4.59 \quad p < .05$$

Table 15
Learner and Non-Learner Patterns (all adults)

L Pattern		L NL M			NL Pattern		Learner Pattern vs. Non-Learner		
							L NL M Pattern		
Dom. Cult. Orient.	+1-2+6	8	-	2	+1+2+6	-	3	1	* .05
Transitional	+1-5-6	4	1	-	+1+5-6	-	3	3	** .05
Apache Oriented	-1 -6	4	2	-	-1 +6	1	7	3	*** .10

*L: M & NL $X^2 = 14.89$ $p < .001$

**L: M & NL $X^2 = 19.37$ $p < .001$

***L: M & NL $X^2 = 19.15$ $p < .001$

Table 16
Learner vs. Non-Learner Patterns

	All Adults						Total Sample					
	L	NL	M	*	L	NL	M	**	L	NL	M	***
Learner Pattern	13	3	2		16	3	2		20	4	2	
Non-L. Pattern	1	12	6		1	13	7		3	13	9	

* L:M+NL $X^2 = 14.89$ $p < .001$

** L:M+NL $X^2 = 19.37$ $p < .001$

*** L:M+NL $X^2 = 19.15$ $p < .001$

and Chiricahua showed: 1) that children who were reared on the Reservation where the social structure was changed relatively gradually retained the perceptual and cognitive techniques of their parents, as judged by their responses to the Rorschach cards and their parents' attitudes and methods of reaction to certain life situations, and 2) that Indian children reared in prisoner of war camps tended to assume the perceptual and cognitive techniques and attitudes of their captors and overseers (Boyer, Klopfer, Boyer, Brawer & Kawai 1965a, 1965b). We have supposed that the crucial factor in determining the assumption of those varying attitudes by the children was their having identified with their own kin. The Chiricahua children, whose depressed parents probably had

little libido available for investment in their relations with their offspring, identified with their soldier guardians (Boyer & Boyer 1967a, 1967b).

As will be itemized in another manuscript, learners and nonlearners of this sample came from homes of comparable natures. There were no discernible consistent differences in economic levels, education, criminal records or work, religious, or housing or camping patterns of the parents of the two groups of children, or the children's health records.

Since 1) the socialization patterns of modern Apache families are very similar if not uniform, 2) the actual environments of these children were not discernibly different, 3) the intelligence of the learners and nonlearners was approximately equal, and 4) the old-age study

showed that the attitudes and perceptual and cognitive techniques of these Indians reflected those of the people with whom they identified, it was hypothesized that a Rorschach study of the influentials of the learners would tend to show more Chiricahua-like responses in their protocols than would those of the nonlearners.

The hypothesis as stated was not validated. Instead it was found that there appears to be one learner pattern for the Chiricahua or outer - world, dominant - culture - oriented, and another for the Mescalero or inner - world, Apache - oriented (See Tables 10, 11 & 12). Moreover, it was noted that when aspects of those two learner patterns were combined and applied to both high and low scorers, the learner influentials tended to show congruency in the criteria under examination; that is, they tended to show either a consistent Chiricahua - like or Mescalero - like pattern (See Table 14).

One type of incongruency (-1+6) appeared to represent the nonlearner characteristic of the Apache - oriented influentials. The nonlearner pattern of the category (-1+6) actually encompasses a wider range of overall pattern than can be described properly as Apache - oriented in the sense of implying similarity to the Mescalero Way. Only two subjects evidence what could truly be called an Apache - oriented or Mescalero - like pattern (total score of less than 3), while two have what is essentially a dominant - culture - oriented nonlearner pattern except for the low productivity (-1+2+6) (total score of five or more), and six, or the bulk of this group, have a total score of four and are perhaps best described as transitional rather than as oriented in either direction. However, as the nature of this pattern is quite different from those we have labelled transitional and as a profusion of categories would serve little purpose, all those showing the pattern -1+6 have been grouped together. All that is necessary is to recall that this pattern does include a heterogeneous group of individuals and that the label Apache - oriented is somewhat misleading in regard to the nonlearner variant of the pattern.

The other type of incongruency (+1-6)

appeared to present a transitional pattern, neither quite dominant - culture - oriented nor yet Apache - oriented, a pattern which itself had learner and non-learner variants.

Let us begin by examining the meaning of +1, the presence of 16 or more responses. In general, *R* is an indicator of productivity. It reflects both a responsiveness to the stimuli and a willingness and ability to communicate the responsiveness verbally. In the framework of the definition of *learner* as it was used by the teachers of the kindergarteners and as it is used here, it is expectable that this sign would characterize the majority of learner influentials. Such productivity on the part of influentials, however, does not necessarily ensure either readiness on the part of the influentials to encourage the children's participation in the school situation, nor can it be considered as a *sine qua non* for their successful involvement.

A response of +1, or responses approaching the American average, is a characteristic of the dominant - culture - oriented, who also show the Chiricahua - like pattern in their responsiveness to color (+5+6). It is, however, the *absence* of a trait commonly found among the old-age Chiricahuas that distinguishes the learner from the nonlearner influential among the dominant-culture-oriented group. The analysis of the old-age protocols revealed the Chiricahuas to be more attracted to large details than were the Mescaleros. A large detail preference in response to the Rorschach stimuli reflects an every-day, practical approach. Nevertheless, a disproportionately high *D%* suggests that either the individual may not be capable of a broad, integrative view, or else, being capable of such a view, clings defensively to the commonplace. The old - age Chiricahuas were judged to be defensively restricted (Boyer, Klopfer, Boyer, Brawer & Kawai, 1965a, 1965b).

On the other hand, the Apache - oriented influentials gave fewer than 16 responses. In the Apache - oriented learner pattern $CF+C>FC$ as was found among the old - age Mescaleros: among the nonlearners this is not true. It will be recalled that the nonlearner pattern of

the category $(-1+6)$ encompasses a wider range of overall pattern that can be described properly as Apache-oriented. Here, too, the nonlearner variant of the category Apache-oriented includes a more heterogeneous group than the category label would imply. However, we do not judge this to change the implications of the pattern. To the extent that those who exhibit this pattern are transitional, the low productivity (-1) takes on added meaning and supports the suggestion of constriction through lessened responsiveness to and interaction with the world of stimuli, if not actual withdrawal. Perhaps in this instance the lesser productivity of the Apache-oriented learner influentials is balanced by an emotional responsiveness to stimuli, an emotional spontaneity which does not exist among the nonlearner influentials of this group. It has been noted that the absence or near absence of $CF+C$ may indicate excessive control and superficiality in socialized responses (Ainsworth and Klopfer, 1954). Thus, while the dominant-culture-oriented nonlearner influentials seem to limit the world of stimuli to the evident and commonplace practical, the Apache-oriented nonlearner influentials seem to lack responsivity to the emotional demands of their social environment.

We now turn to the transitional group who reveal the increased productivity of the dominant-culture-oriented but show weak control of emotional responsiveness as characterized by the ratio of $CF + C > FC$. We have interpreted the ratio $CF + C > FC$ positively in the discussion of the Apache-oriented group and negatively in that of the transitionals, thus presenting an apparent paradox. However, the meaning of any Rorschach characteristic can be understood only in its context, the overall response to the Rorschach stimuli within which it occurs. Statistical analyses of Rorschach signs are complicated by the fact that it is necessary to remove them from the contexts in which they occur. The use of patterns of occurrence of different signs in such analysis restores an aspect of context to some extent. Here it is held that the interpretation of the $CF + C$ ratio differs as to whether it is made in a context of overall high or low respon-

siveness and productivity. Ainsworth and Klopfer (1954, p. 282) have written: "The natural CF combination thus has both positive and negative implications: positively, it may be taken as an indication of spontaneity, while negatively it may be taken as an indication of inadequate control of emotional responsiveness." "Whether emphasis is to be given to the positive or the negative implication of CF is to be judged from the rest of the record." "Even though CF may outnumber FC , there may still be an adequate basis of control elsewhere in the record... if CF responses occur in a psychogram without signs of adequate control, the implication is that there is an impulsive, uncontrolled acting out of emotional reactions." Low R , however, is not among the signs generally considered as suggestive of "an adequate basis of control elsewhere in the record." Perhaps it might better be seen as part of the withdrawal/inhibition which restrains much nonintoxicated Apache behavior. L.B. Boyer (1964, p. 217) has written: "the Apache are as a rule... a shy, modest people." "When intoxicated, their behavior is quite otherwise... and violence is to be expected."

Inadequate outer controls is perhaps the most typical but certainly at least the most frequently reported finding in Rorschach studies of people in the acculturative process. It may be noted, for example, that with their relatively high productivity, increased color responses of all kinds and negative $CF + C$ ratio, the transitional nonlearner influentials of this category show a pattern not unlike Spindler's (1955) Peyote cultists. The learner influentials differ from the nonlearner in this transitional category in that they resemble the Mescalero way in both of the criteria under examination which relate to color: unlike the nonlearner influentials they lack a main FC response. In general, the absence of a main FC response cannot be interpreted as changing the implications of the negative $CF + C$ ratio. In this case, the absence of a main FC response may be indicative of other qualitative similarities to the Mescalero Way, but this suggestion

remains speculative until a qualitative examination of the protocols is done. It will be recalled that in the qualitative study of the old - age groups, it was found that the Chiricahuas tended to respond to the bright red of Cards II and III while the Mescaleros tended to avoid them and to react much more freely to the soft pastels of Cards VIII, IX and X (Boyer, Klopfer, Boyer, Braver & Kawai, 1965a, 1965b). In the study of the learners and nonlearners, the former responded to the bright colors of cards II and III, although those who reacted in the Converted Mescalero Way also responded to the pastel colors of Cards VIII, IX and X (Boyer, Boyer, Kawai and Klopfer, 1967). We suppose that in a qualitative examination it will be found that the transitional learner influentials will respond to the pastels, like the Mescaleros, and reveal a greater aspect of spontaneity, while the color responses of the nonlearner transitional influentials will be to the bright reds, like the Chiricahuas, and to have less adequate controls over the strong emotions.

The findings of this study, then, suggest that the learner influentials tend to have a more integrated personality organization than those of the nonlearners, judged by responses to the seven criteria which have been considered. However, the evidence is significant only in terms of certain aspects. The sensitivity of shading (*Fc*) is an important indicator of the awareness of and acceptance of affectional needs and of empathy with others. This criterion does not distinguish between learner and nonlearner influentials. Perhaps it is redundant to state that such factors are important in the establishment of deep and meaningful object relations. Rather, it appears that the two groups of influentials can be distinguished on the basis of their responsiveness and ability to cope with the world of external stimuli. The manner of the learner influential, whether Apache- or dominant-culture-oriented, suggests that he has the ability to deal with the external world with relative spontaneity. The essence of this observation regarding the learner influentials is identical with the findings in regard to the learner/nonlearner children

themselves: "... the main basis for learner or nonlearner distinction seems to depend on their underlying attitude towards the outside world." (Boyer, Boyer, Kawai and Klopfer, 1967).

The nonlearner influentials evidence difficulty in coping with the world as shown in patterns either of heightened reactivity with inadequate controls or through some sort of constriction of responsivity. In the current sample, the latter alternative predominated. Among the more Chiricahua - like of the nonlearner influentials, this was shown through an impoverishment of approach in terms of an oversimplification of reality. Their responses revealed a tendency to react to the stimuli in a narrow, commonplace manner. Among the more Mescalero - like, the pattern was one of limited interaction with the world in terms of low productivity and a loss of spontaneity, with a tendency to withdraw from the emotional impact of social situations. These patterns of the nonlearner influentials might be interpreted in either of two ways, neither of which need exclude the presence of the other. They may reflect: 1) a defensive reaction against unconsciously perceived dangers in acculturative situations and/or 2) identification with the perceptual and cognitive techniques and *Weltanschauung* of important parent figures. The old - age study gives more credence to the latter of these hypotheses. Historically, the Mescalero pattern has been to withdraw from disturbing external realities and to retain the old - time Apache orientation. The flight from outer reality afforded by living in the Reservation milieu was unavailable to the old - age Chiricahuas. The Mescaleros were better able to deny unpalatable realities by narrowing their awareness to the commonplace, the immediately necessary, and to avoid conscious knowledge of its implications.

The third variant of the nonlearner influential pattern shows inadequate outer controls. In general, this pattern of response to the Rorschach stimuli is found in individuals who defensively use action rather than introspection and alloplastic rather than autoplatic behavior. However, we know that the

general pattern of these Apaches is that of defensive action and alloplastic behavior (L.B. Boyer, 1964; R.M. Boyer, 1962). An examination of the anthropologically acquired data will be made to determine whether the individuals who produced this third variant were more apt to use defensive action and alloplastic behavior when sober than were other influentials who were tested.

Clinical studies showed the old - age Mescaleros to be more secure emotionally and better able to form deep emotional relationships than the old - age Chiricahuas (Boyer and Boyer 1967a, 1967b, 1967c), this finding being supported by their responses to Rorschach stimuli (Boyer, Klopfer, Boyer, Brawer, and Kawai, 1965a, 1965b). The study on Apache age groups suggested that elderly Apaches of both groups were more secure and better able to form abiding relationships than middle - age and young - age groups, the former being defined as individuals 26 to 49 years of age and the latter, 13 through 25. With the exception of the grandparents, largely maternal in this matrifocal group (R.M. Boyer, 1964), the influentials who comprise the current sample stem from the middle - age and young - age groups, although members of the last - named group, the influential siblings of the learner and nonlearner children, have been omitted from statistical consideration. At this point, it may be noted, too, that in this matrifocal group, it might be expected that the influence of maternal grandmothers on the small children would be more important to the identification patterns of the small children than the influence of maternal grandfathers. However, our sample of grandparents is too small to allow statistical comparison of the relative influence of the grandmothers and grandfathers.

One possible implication of the results of the present study is encouraging, namely that the learner influentials, whether dominant-culture-oriented or Apache-oriented, appear to have some capacity for spontaneity and emotional control. In the past, the dominant-culture-oriented were more shallow than

the Apache - oriented. It will be recalled that one group of learners, those who evidenced the Converted Mescalero Way, responded in both the Mescalero - like and the Chiricahua - like manners. Only a future longitudinal study can afford evidence which will permit valid extrapolation from this series of data.

Conclusion

The hypothesis that the adults who were most influential in the lives of the learners would respond to the Rorschach stimuli in a Chiricahua - like, relatively acculturated manner was not validated by this preliminary quantitative study. The protocols of the influentials in the lives of the learner and nonlearner children could not be distinguished on the basis of similarity to the Mescalero or Chiricahua pattern by examination of the seven criteria under consideration. It was found that adult influentials of both learner and nonlearner children revealed similarity to both the Mescalero and Chiricahua patterns. What was consistent in the responses of the learner influentials was a more balanced approach to the Rorschach stimuli than was shown by the nonlearner influentials.

REFERENCES

- Ainsworth, Mary B. & Klopfer, B. Quantitative analysis. In: Klopfer, B., Ainsworth, Mary B., Klopfer, W. G. & Holt, R. R. *Developments in the Rorschach technique*. New York: World Book Co., 1954, 249-316.
- Basehart, H. W. *Chiricahua Apache Subsistence and Socio-Political Organization*. Univ. of New Mexico Mescalero-Chiricahua Land Claims Project, 1959, mimeographed.
- Basehart, H. W. *Mescalero Apache subsistence patterns and socio-political organization*. Univ. of New Mexico Mescalero-Chiricahua Land Claims Project, 1960, mimeographed.
- Boyer, L. B. Remarks on the personality of shamans, with special reference to the Apache of the Mescalero Indian Reservation. *Psychoanalytic study of society*, 1962, 2, 233-254.
- Boyer, L. B. Psychological problems of a group of Apaches: Alcoholic hallucinosis and latent homosexuality among typical men. *Psychoanalytic study of society*, 1964, 3, 203-277.

- Boyer, L. B. & Boyer, Ruth M. Algunos efectos de la aculturación sobre los caracteres de la personalidad en los actuales Apaches viejos de la Reservación Mescalero (Mescaleros y Chiricahuas). *Cuadernos de Psicoanálisis*, 1967, 2, in press. (a)
- Boyer, L. B. & Boyer, Ruth M. Some influences of acculturation on the personality traits of the old people of the Mescalero and Chiricahua Apaches. *Psychoanalytic study of society*, 1967, 4, in press. (b)
- Boyer, L. B. & Boyer, Ruth M. Algunos efectos de la aculturación sobre los vicisitudes del impulso agresivo. *Acta Psiquiátrica y Psicológica de América Latina*, 1967, 3, in press (c)
- Boyer, L. B., Boyer, Ruth M., Brawer, Florence B., Kawai, H. & Klopfer, B. Apache age groups. *Journal of Projective Techniques & Personality Assessment*, 1964, 28, 397-402.
- Boyer, L. B., Boyer, Ruth M., Kawai, H. & Klopfer, B. Apache "learners" and "non-learners." *Journal of Projective Techniques & Personality Assessment*, 1967, 31, 22-29.
- Boyer, L. B., Klopfer, B., Boyer, Ruth M., Brawer, Florence B. & Kawai, H. Effects of acculturation on the personality traits of the old people of the Mescalero and Chiricahua Apaches. *International Journal of Social Psychiatry*, 1965, 11, 264-271. (a)
- Boyer, L. B., Klopfer, B., Boyer, Ruth M., Brawer, Florence B. & Kawai, H. El Rorschach en el estudio de los grupos apaches. *Revista Mexicana de Psicología*, 1965, 1, 565-574. (b)
- Boyer, Ruth M. *Social structure and socialization among the Apaches of the Mescalero Indian Reservation*. Unpublished Ph.D. dissertation, Univer. of California, Berkeley, 1962.
- Boyer, Ruth M. The matrifocal family among the Mescalero; additional information. *American Anthropologist*, 1964, 66, 593-602.
- Freud, Anna. *The Ego and the Mechanisms of Defense*. New York: International Universities Press, 1936.
- Opler, M. E. *An analysis of Mescalero and Chiricahua Apache social organization in the light of their systems of relationship*. Ph.D. dissertation, Univer. of Chicago, 1933. Private edition distributed by Univer. of Chicago Libraries, 1936.
- Shepardson, Mary. Navaho ways in government. American Anthropological Association, Mem. 95, 1963, 65, No. 3, Part 2.
- Spindler, G. D. *Sociocultural and Psychological processes in Menomini Acculturation*. Berkeley, Univer. of California Press, 1955.
- Thomas, A. B. *The Chiricahua Apache, 1695 - 1876*. Univer. of New Mexico Mescalero-Chiricahua Land Claims Project, 1959, mimeographed. (a)
- Thomas, A. B. *The Mescalero Apache: 1653 - 1874*. Univer. of New Mexico Mescalero-Chiricahua Land Claims Project, 1959, mimeographed. (b)

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A Reexamination of the Color-Shading Rorschach Test Response and Suicide Attempts

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Summary: This research adds support to a previous finding that the use of shading in colored areas of the Rorschach plates by hospitalized psychiatric patients is an indicator of suicidal tendencies. The color-shading response occurred significantly more often among patients who had attempted suicide than among those who had not attempted suicide. Speculations about psychological processes that may be involved in the color-shading determinant are offered.

Introduction

Appelbaum and Holzman (1962) demonstrated that hospitalized psychiatric patients who use both color and shading as determinants of at least one response to the Rorschach Test cards, "the color-shading response," are more likely to have attempted or committed suicide than are those who do not give this test response. Despite the skepticism of these authors to a blind sign approach to tests, they felt obliged to investigate systematically the possibility of such a relationship because they and others had noted it so often clinically. The present authors agree with the prejudice against a simple sign approach. The use of a single sign to predict behaviors contradicts much understanding of the proper use of the Rorschach Test and implies simpler relationships than one usually finds when attempting to predict human behavior. But continued clinical observation by the present authors and others has been consonant with the demonstrated research relationship. Therefore, it was decided to investigate the relationship again, with different Ss. There are several differences between this and the Appelbaum-Holzman research, and so the present research might best be thought of as a continued effort to validate the finding, rather than as a replication.

The color-shading response is scored according to the usual criteria for a color response, but in addition, Ss use varia-

tions in shading as a determining characteristic of content. We used Rapaport's notation for the color-shading response, (C), his scoring and test administration. (C) refers neither to shading seen in an achromatic color, scored *Ch*, nor to the specifications by Ss of lightness or darkness in an achromatic area, scored *C*. It also does not refer to shading used only to delineate or "carve out" figures, scored (*c*) on both chromatic and achromatic cards. The color-shading determinant is inquired into in the same way as other determinants.

Some examples of this response are:

1. Card 8, lower center half; "Shape and color of an iris; the velvety insides because of the shading." Scored *FC* (C).
2. Card 8, upper center blue: "Bluish crocheted material, nubby knit or boucle." In inquiry, the texture was attributed to the shading. Scored *C* (C) *F*.
3. Card 10, center pink detail: "Some kind of tissue, skin; it's burned at the edges." Inquiry brought out both color and shading as determinants. Scored *C* (C).

Method

The relationship to be tested is between the appearance of the color-shading response in the Rorschach Test protocols of hospitalized psychiatric patients who made suicide attempts, as compared to a control group of hospitalized patients who had not made suicide attempts.

Experimental group. All Ss were drawn from the clinical records of the C.F. Menninger Memorial Hospital from 1960 through 1965. Fifty-two Ss, a portion of whom ultimately comprised the experimental group, were randomly selected from a list of patients believed to have attempted suicide. The list, compiled by Dr. Harold Voth for another study, was drawn from questionnaires sent to hospital psychiatrists and psychotherapists requesting information about any suicide attempts included among their patients. Voth added to the list patients whose admission notes and case summaries mentioned suicide attempts. He selected from this material patients that seemed to him to have made actual attempts at suicide rather than only "gestures." This differed from the Appelbaum-Holzman criterion of any motoric act of a suicidal nature. Patients who only talked about suicide, whether fleetingly or at length, were not included as Ss in either the Voth or Appelbaum-Holzman studies.

A major issue involved in studying a determinant such as color-shading is the difficulty in scoring Rorschach Test protocols reliably. Of the aforementioned 52 records, 17 had to be dropped from the experimental group because of the following difficulties: two protocols were illegible, one protocol had been only partially administered, and one had been administered in a different language. Thirteen protocols proved insufficient information to score responses which, in the researcher's judgment, may have included the determinant.

To the 35 experimental Ss, 7 Ss were added under circumstances to be described below. The experimental group comprised 42 Ss; 7 males and 35 females. The mean age was 32; the mean IQ was 118. Their diagnoses included 11 character disorders (9 of which were infantile personalities), 17 depressive reactions, 11 schizophrenic reactions, 1 chronic brain syndrome, 1 anxiety reaction, and 1 adjustment reaction of adolescence.

Control group. On the basis of independent hospital tabulation of suicidal and non-suicidal patients, 58 test records were

selected by medical records personnel from the files of the C.F. Menninger Memorial Hospital for the period between 1960 and 1965. In order to insure that this hospital tabulation was accurate, and that there were no cases of suicide attempts in this group, the experimenters independently reviewed admission notes and case summaries. We discovered that 7 Ss had clearly made a suicide attempt, and we therefore included them in the experimental group. Thus, the control group, as well as the experimental group, was selected on the basis of clinical material, and without reference to test data and before tests were scored. As with the experimental group, some Ss had to be dropped from the analysis, 2 for illegibility, one because it was only partially administered, 13 because inquiry was insufficient for us to decide whether or not color-shading was used. We were left with 35 control Ss: 22 males and 13 females. The mean age was 34; the mean IQ was 115. Their diagnoses included 16 character disorders (of which 2 were infantile personalities and 6 passive-aggressive personalities), 9 depressive reactions, 7 schizophrenic reactions, 1 manic-depressive reaction, 1 anxiety reaction, and 1 chronic brain syndrome. Thus, the groups were comparable as to psychiatric diagnoses except for a 14% greater number of depressed patients in the experimental group. (This greater number of depressed Ss may reflect the common tendency to name people who have attempted suicide as depressed regardless of their other nosological characteristics, rather than reflecting a substantive nosological difference.)

Measures. Intelligence quotients were obtained from the Wechsler-Bellevue Intelligence Scale. Rorschach Tests were administered according to Rapaport's (1946) system. Both tests were given as part of the standard battery of psychological tests administered to patients in the C.F. Menninger Memorial Hospital. The colored Rorschach Test cards were re-scored for color-shading by the authors working independently and without knowledge of whether a protocol was from the experimental or control group.

The scorers then met to discuss difficulties in scoring and to work out disagreements.

The judgment made by the scorers was the presence or absence of color-shading. An *S* was considered to have given a response including color-shading irrespective of whether (a) form was predominant; (b) shading was predominant; (c) a simple reference to color-shading was made; or (d) a color-shading response was clearly evident but denied.

Results

Multiple appearance of the color-shading determinant was no more often associated with suicide attempts than single occurrence (Chi-square = 0.167). Therefore, only presence or absence of the determinant was considered in the statistical analysis. Table 1 shows the incidence of the color-shading determinant for males, females, and combined sexes in the experimental and control groups. Chi-square tests indicate that the differences between the experimental group and the control group for males (Chi-square = 4.15, $p < .05$), for females (Chi-square = 13.85, $p < .0005$) and for both sexes combined (Chi-square = 14.24, $p < .0005$) are all statistically significant.

The effectiveness of the sign in predicting suicide attempts for each sex as well as for both sexes increases our confidence in its general application. For both sexes combined the determinant correctly labels 88% (see Table 1) of the

experimental *Ss* as having made a suicide attempt. However, 49% of the control *Ss* also give this response. It may well be that at least some of these patients will some day make a suicide attempt or that they would have if not hospitalized and treated. By using retrospective history as a criterion we are identifying a population of "susceptibles." Whether the 49% are properly included in that population is not ascertainable from this research.

All groups used *C* (*c*) *F* proportionately more often than *FC* (*c*) and *C* (*c*), with no substantial difference between the experimental and control groups (Chi-square = 0.067).

For both experimental and control groups the color-shading responses appeared in descending order on Cards VIII, IX, X, II, and III. We speculate that this hierarchy is based on the structure or degree of stimulus potential for seeing color-shading on the card.

Correlation between the determinant and the total number of responses was $r.p. \text{ bis} + .41$, $p < .001$, a positive relationship. However there is no relationship between Total *R* and suicide attempts.

In the present study since we did not obtain an accurate matching of subjects in the experimental and control groups with regard to age and IQ, we decided to compute correlations between these variables and the presence or absence of the determinant and suicide attempts. The sign is correlated to the female's IQ ($r.p. \text{ bis} + .38$, $p < .01$) only. There is no relationship

Table 1
Incidence of the Color-shading Determinant
in Suicidal and Non-suicidal Subjects

	Color-Shading	
	Present	Absent
Experimental Group		
Males	7	0
Females	30	5
Both Sexes	37	5
Control Group		
Males	13	9
Females	4	9
Both Sexes	17	18

for either sex between IQ and suicide attempts. There are not statistically significant relationships between age and either the color-shading determinant or suicide attempts for either males or females. These findings seem to confirm the importance of the color-shading determinant as an independent predictor of suicide attempts.

Discussion

Simplistic though it is, and contrary to what we believe is the proper use of the Rorschach Test, a relationship between the color-shading response and attempted suicide in hospitalized psychiatric patients has again been demonstrated.

We should like to offer some speculations about the processes which produce the color-shading response, and their linkage to suicide and other behavior. All of these begin with the assumption that the way a person reacts to color on the Rorschach Test is indicative of his emotional responsiveness. Appelbaum and Holzman suggest that the color-shading response results from an "immersion" in the color attributes of the inkblots, reflecting a lack of barriers or desensitizers to emotional arousal. The result, for people in dire circumstances, would be an unusually intense experience of their plight. They may feel overwhelmed by pain, perhaps of unusual poignance, intensity, or exquisiteness. Or they may be so lost in the insistent experience of the perceptual and affective present that they lose the palliative functions of time—people bear pain more easily if aware that it will be over soon and that better experiences are available at present or will become available; in short, if they have hope. This line of reasoning emphasizes the patient's affective experience. Another speculation, suggested by Mayman (1967), emphasizes the defensive style of avoiding or isolating emotion. The explanation can be delineated by first surveying the usual possibilities of responding to color in inkblots. Some people respond as if the color were not there, and from this we infer inhibition and constriction of feeling. Another way of responding is to let the color become

the determining factor, overriding mechanisms of control and delay, from which we infer that the person behaves more according to the impulsion of feeling than through the calculation of thought. In some people this leads to impulsive actions, while in others it may lend itself to spontaneity, sparkle, liveliness. Still another style is to channel feelings into conventional patterns. This may result in excessive compliance or friendly warmth. Still another way of discharging affect is to organize the visceral process which underlies them into more circumscribed physiological discharge such as bodily symptoms. The color-shading response seems different in important ways from all of these. Unlike those patients who behave as if the color were not there, patients who give the color-shading response do react to the color, but their reaction is marked by their attending to the lines and gradations which make up the shadings and which interrupt the homogeneity of the color itself. Thus, one can consider that in some ways theirs is an abortive color response; by implication they could feel fully, but somehow do not. They stand aside, so to speak, and do something other than experience emotion, something of a more cognitive, differentiated, even calculated kind. It is not "blood because it is red," but "dried blood because it is red, and the shading indicates it is encrusted." It is not just "ice cream because of the different colored scoops," but "ice cream because of the textures in the color." The inference from this might be that these patients adopt an affective distance, a cold-bloodedness which makes it possible for them, while in situations potentially rife with feeling, to think and act once-removed, for example, from the fear, pain, and horror which might otherwise be entailed in their suicidal actions. In support of this idea are the clinical observations of the dispassionate way suicidal people carry out the necessary preparatory actions, and later how they describe their attempt. All suicides need not, of course, be of this kind, but it seems that a great number are. It is likely that in healthy people such an affective style is of consid-

erable usefulness. For example, psychotherapists might find it highly adaptive to allow affective stimulation from their patients and manage it by "stepping aside" in order to make a calculated use of the experience as a signal. Such capabilities for subtle receptivity to feeling coupled with capacities for isolation would seem useful to all people in situations which require understanding instead of either avoidance, quick reaction, or merely conventional reactions to the stimulation of affects.

This line of reasoning is different from that usually advanced as the psychological meaning of shading in achromatic areas (*Ch*), and so jibes with the Appelbaum-Holzman finding that *Ch* is not a useful predictor of suicide, despite the obvious similarities in the two responses.

These two speculations offered as explanations for the demonstrated relationship between color-shading and suicide may be, but are not necessarily, mutually exclusive. The strength of affects and the person's vulnerability to them may predispose him to such aborting and isolating defensive reactions.

REFERENCES

- Appelbaum, S. A. & Holzman, P. S. The color-shading response and suicide. *Journal of Projective Techniques*, 1962, 26, 155-161.
Mayman, M. *Personal communication*. 1967.

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Some Age Norms Obtained for the Holtzman Inkblot¹ Technique Administered in a Clinical Setting

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Summary: Figures are presented for four representative groups of children and adolescents seen in clinical practice over a period of twenty-one months. These figures are compared with the reference norms provided in the Holtzman monograph.

The Holtzman Inkblot Technique (Holtzman, 1958), consisting of two parallel forms of 45 cards each, is scored by a numerical system. Holtzman, Thorpe, Swartz, & Herron (1961, pp. 34-83 & 262-375), in the monograph "Inkblot Perception and Personality," give detailed directions for scoring, and tables of norms for five normal and three institutional reference groups (Holtzman et al., 1961, pp. 185-221). The study reported in this paper was undertaken to find out how norms obtained from subjects seen in a non-resident clinic would compare with Holtzman's data for normal groups.

Method

The subjects were referred to a private clinic by parents, teachers or physicians for psychological evaluation. Like Holtzman's reference groups, they were chiefly from middle class homes. The parents were mostly high school graduates or better; father's occupation ranged from skilled workman to professional; family income from modest to comfortable. None of the subjects was under intensive therapy at the time of the study, and none had been in a mental or psychiatric institution at any time. The Holtzman Inkblot Technique was administered to all subjects evaluated in the clinic from 1 December 1964 to 31 March 1966. The test was given in a conventional office setting, by

daylight. All records were obtained and scored by the same examiner. Equal numbers of Form A and Form B were used, in random order. Male subjects outnumbered females by approximately two to one, because about twice as many males as females are referred to the clinic for evaluation. This ratio has remained more or less constant over a number of years, but the reasons for the imbalance are not clear. Holtzman reports that, in one reliability study using 72 subjects in the 11th grade, boys scored significantly higher than girls for Hostility (Holtzman et al., p. 140), and in another reliability study using 120 college students, men scored significantly higher than women in Reaction Time, and lower in Color, Movement, Pathognomic Verbalization, and Affect Arousal (Holtzman et al., 1961, p. 134). He does not, however, report any consistent sex differences across the age groups. Affect Arousal has since been discarded from his scoring system (Holtzman et al., 1961, p. 34), and no attempt was made to score for this variable in the present study.

Holtzman's five normal groups are as follows: Group A, College students; Group B, Average Adults; Group C, Seventh Graders; Group D, Elementary School Children; Group E, Five-year-olds. In the study reported here, no norms were obtained for five-year-olds, owing to lack of cooperation from most of the subjects. It may be doubted whether the HIT is suitable for clinical use at this age. Six-year-olds were somewhat more cooperative, but were discarded, because Holtzman gives no norms for this age. His Group D sub-

¹ Based on a paper presented at the annual meeting of the Virginia Academy of Science, in Norfolk, on 6 May 1967.

jects are drawn from grades two to six. Records of subjects over 22 were also discarded, because of the wide variations in age and education among these older subjects.

There remained 166 protocols, equally divided between Forms A and B, obtained from 113 boys and 53 girls. All subjects were enrolled in a school or college. Of these, 39 were in grades two through six; 50 in grades seven through nine; 55 in grades ten through twelve; 22 in undergraduate colleges. Holtzman does not give norms for grades eight and nine. In the present study it was decided to include eighth- and ninth-graders with seventh-graders as a junior high school group, and compare them with Holtzman's Group C. Tenth-, eleventh- and twelfth-graders were grouped together and compared with Holtzman's Group B, which was partly standardized on eleventh-graders. All subjects were given the Stanford-Binet Intelligence Scale, Form L-M, shortly before the administration of the HIT. The same examiner administered both tests.

The 166 protocols were scored for all 22 variables. It was hypothesized that the clinical subjects, as a group, would tend to: perceive less clearly and accurately, have a weaker sense of body limits, overlook the obvious, be less concerned with people, more with anatomy, sex, abstract concepts, and the symmetry of the blots, use language indicative of deviant thinking, be more defensive, resistive, anxious and hostile. It was therefore expected that the clinical group would score lower for *FD*, *FA*, *I*, *H*, *Br*, *P*, and higher for *R*, *S*, *V*, *A*, *At*, *Sx*, *Ab*, *Ax*, *Hs*, *Pn*, *B*. It was also hypothesized that these individuals would diverge widely from the norm in both directions in speed of reaction, in response to the whole rather than to separate aspects, in emotional sensitivity and lability, and in richness of fantasy life. It was therefore expected that wide individual variations from the norm would be found for *RT*, *L*, *C*, *Sh*, *M*, but that these varia-

tions would tend to cancel out in the calculation of the mean.

Results

The results are shown in Tables 1 - 4. For purposes of comparison, Holtzman's norms are also shown.

Table 1 shows the data obtained from 39 subjects enrolled in grades two through six. Of these 32 were boys and 7 were girls, a higher male-female ratio than that of the clinic population as a whole. There were 33 enrolled in Virginia schools, 2 in New Jersey, 2 in Maryland, 1 in the District of Columbia, 1 in Georgia. They were distributed among the grades as follows: 5 in grade two; 9 in grade three; 7 in grade four; 11 in grade five, 7 in grade six. The age range was 7-13, with a median of 10 and a mean of 9.3. The Stanford-Binet IQ range was 78-154, with a median of 111 and a mean of 114. The reasons for which the subjects were referred to the clinic (not necessarily the underlying problems) were as follows: failure or near-failure in school, 21; aggressive or withdrawing behavior, 10; general concern about guidance, (e.g., "we want to know what we should expect of him," "he doesn't seem happy with himself"), 6; evaluation for court in custody suit, 2.

Holtzman's Group D is a composite of 60 children in a parochial school in Austin, Texas, balanced for sex, grade, California Mental Maturity IQ, Sarason Anxiety score, and 72 fourth-graders in a public school in Hamden, Connecticut, Kuhlmann-Anderson IQ range 100-112, balanced for sex and Sarason Anxiety score (Holtzman et al., 1961, P. 86).

Table 2 shows the data obtained from 50 subjects in grades seven, eight, and nine, 33 boys and 17 girls, reflecting the sex ratio of the clinic population as a whole: 38 were in schools in Virginia, 8 in Maryland, 2 in the District of Columbia, and 2 in other states. Of these subjects 6 were in grade seven, 16 in grade

Table 1
HIT scores of 39 elementary school children seen in a clinic, compared with Holtzman's Group D Norms.

Variable	RT	R	L	S	FD	FA	C	Sh	M	V	I
<i>Clinical Group Range</i>	5-29	0-15	4-82	0-5	51-106	23-49	2-40	0-19	4-67	0-65	0-12
Mean	13.43	1.31 (85%=0)	32.61	.97 (56%=0)	81.38	34.38	23.36	8.36	30.87	12.67 (5%=0)	3.07
<i>Holtzman Group D Range</i>	4-47	0-21	1-96	0-7	18-119	21-56	1-37	0-27	0-77	0-49	0-15
Mean	17.37	1.90 (72%=0)	37.09	1.35 (37%=0)	73.70	42.86	11.97	9.41	28.81	5.39 (30%=0)	3.64
Variable	H	A	At	Sx	Ab	Ax	Hs	Br	Pn	B	P
<i>Clinical Group Range</i>	2-44	10-46	0-21	0-1	0-1	1-28	1-33	1-12	1-19	0-2	0-15
Mean	18.23	26.35	3.23 (31%=0)	.03 (97%=0)	.05 (97%=0)	9.31	12.33	5.82	6.67	.13 (90%=0)	6.61
<i>Holtzman Group D Range</i>	0-39	2-41	0-15	0-1	0-1	0-25	0-32	0-21	0-16	0-9	1-15
Mean	16.68	23.65	2.60 (40%=0)	.03 (98%=0)	.01 (99%=0)	9.52	9.06	9.06	4.05	.39 (86%=0)	7.96

Note: The distribution for R, S, At, Sx, Ab, and B is similar in both groups with a high proportion of scores of 0 or 1. The means for RT, L, Sh, M are, as expected, close. The means for I, H, Ax, P are also close. The differences between the means for FA, A, Hs, Br, Pn, though small, are in the expected direction. The higher mean of the clinical group for FD and the lower mean for C were not expected. None of these differences is significant, but that for V is significant ($p < .05$), and in the expected direction.

Table 2
HIT scores of 50 subjects in grades 7, 8, and 9 seen in a clinic, compared with Holtzman's Group C norms.

Variable	RT	R	L	S	FD	FA°	C	Sh	M	V	I
<i>Clinical Group</i>											
Range	7-41	1-34	4-72	0-3	31-06	24-49	0-42	0-22	2-92	0-62	0-17
Mean	26.78	5.15 (58%=0)	26.78	.72 (48%=0)	85.72	37.68	9.08	8.02	36.76	11.16 (6%=0)	6.34
<i>Holtzman Group C</i>											
Range	3-51	0-36	0-75	0-4	36-125	30-60	0-60	0-26	0-69	0-25	0-15
Mean	22.29	8.87 (24%=0)	27.91	1.07 (32%=0)	83.91	45.71	15.10	7.12	24.37	2.44 (50%=0)	3.46
Variable	H	A	At	Sx	Ab	Ax	Hs	Br	Pn	B	P
<i>Clinical Group</i>											
Range	2-47	2-44	0-16	0-2	0-6	0-54	1-33	0-18	0-14	0-5	2-14
Mean	23.28	25.46	2.02 (48%=0)	.06 (96%=0)	.26 (94%=0)	11.40	12.1	6.62	5.92	.42 (74%=0)	8.38
<i>Holtzman Group C</i>											
Range	0-32	0-41	0-10	0-1	0-2	0-27	0-24	0-15	0-12	0-3	1-15
Mean	13.48	19.23	2.36 (30%=0)	.01 (99%=0)	.09 (94%=0)	9.14	8.75	6.12	2.85	.25 (85%=0)	7.78

Note: As in Table 1 the distribution is similar in both groups for S, At, Sx, Ab, B. In the clinical group the mean for R is slightly lower but the percentage with no rejections is considerably higher than in Group C. Holtzman remarks that the R score for Group C is out of line with his other normal samples, and attributes it to sampling error or examiner bias (p 190). As expected, the means for RT, L, Sh are close. The means for FD, Br, P are also close. There are some differences between the means for FA, V, Ax, Hs, Pn, C, I, H. All but the last three are in the expected direction, but none is significant. There are, however, significant differences for A ($p < .05$) and M ($p < .01$).

eight, and 28 in grade nine. The age range was 12-16, with a median of 14 and a mean of 13.8. The Stanford-Binet IQ range was 67 - 143, with a median of 107 and a mean of 106. The reasons for referral were as follows: school work (mediocre work, poor motivation, failure), 23; home problems (conflict with parents and siblings, disorganized or rebellious behavior), 10; educational planning, 9; stealing, 3; emotional outbursts in school, 2; cheating, 1; suicide threats, 1; custody case, 1.

Holtzman's Group C norms were obtained from 197 seventh-grade students in four Texas towns. The sample was balanced for sex, social class, and California Mental Maturity score, age range 12-14 with a mean of 12.7, IQ range 67-140, with a mean of 103 (Holtzman et al., 1961, p. 87).

Table 3 shows the scores of 55 subjects in grades ten, eleven, and twelve, compared with Holtzman's Group B (Average Adult) norms. Of the clinical subjects, 31 were boys and 24 were girls. Boys still outnumber girls, but not so markedly as in the younger groups. (It may be that more girls have problems at this age, or it may be that parents, teachers and physicians do not consider the problems of younger girls as important as those of younger boys.) The subjects were drawn from 38 schools in six States and the District of Columbia. Of the subjects 27 were in grade ten, 21 in grade eleven, 7 in grade twelve. The age range was 14-18, mean 16.1. The Stanford-Binet IQ range was 77 - 149, with a mean of 108 and a median of 110. They were referred for the following reasons: academic problems (failure, low motivation), 18; educational planning (choice of courses, college, occupation), 10; conflict with parents, 9; emotional displays in school (crying, temper outbursts), 7; trouble with police (trespassing, taking cars), 4; resistance to school (dropping out, truancy), 3; sex problems, 2; stealing, 1; refusal to eat, 1.

Holtzman's Group B is composed of (a) 72 eleventh-graders in Chicago schools,

balanced for sex, school achievement, and father's occupational level; (b) 80 Austin firemen, ages 21-63, mean 36; (c) 100 housewives in two Texas communities, aged 19-65, mean 38, most of whom were high school graduates with no college education (Holtzman et al., 1961, p. 88-89). These three samples were merged into a single group of 252 subjects on the grounds that the samples involved were similar and the resulting norms would be more stable. (Holtzman et al., 1961, p. 185.)

Table 4 gives the figures for 22 college students, 17 men and 5 women. This is in accordance with the sex ratio of the total clinic population. The subjects were 13 freshmen, 5 sophomores, 2 juniors, and 2 seniors, enrolled in colleges in 11 States and the District of Columbia. The age range was 17-22, with a mean of 19.9. The Stanford-Binet IQ range was 92-145, mean and median 121. Seven were seeking vocational counselling, and fifteen were referred because of failure in college work.

Holtzman's Group A is composed of 140 University of Texas students, and 66 Austin College freshmen. Of the University of Texas subjects, 120 were balanced for sex and examiner. The subjects in (b) formed two groups, balanced for scholastic aptitude scores, high school record, and motivation to enroll in an experimental curriculum. Group A thus contains 206 subjects altogether (Holtzman et al., 1961, pp. 89-90 & 185).

Discussion

For most variables, no significant differences were found between the clinical and normal samples. No one variable shows a significant difference across the age groups. The higher means in the clinical samples for *V* in elementary school, and for *A* in junior high school, and the lower mean for *I* in college are in accordance with expectation, but the higher means for *FD* in senior high school and for *M* in both junior and senior high school

Table 3
HIT scores for 55 students in grades 10, 11 and 12, seen in a clinic, compared with Holtzman's Group B norms.

Variable	RT	R	L	S	FD	FA	C	Sh	M	V	I
<i>Clinical Group</i>											
Range	5-44	0-17	3-75	0-10	57-111	25-48	1-37	1-25	8-99	0-62	0-19
Mean	18.42	1.73 (77%=0)	26.67	1.11 (31%=0)	83.44	39.54	14.27	9.09	43.24	12.29 (11%=0)	7.07
<i>Holtzman Group B</i>											
Range	4-54	0-26	4-71	0-3	24-128	22-54	0-42	0-29	0-59	0-44	0-16
Mean	20.33	4.31 (36%=0)	33.29	.75 (50%=0)	73.87	44.33	17.80	10.79	24.88	4.10 (27%=0)	4.77
Variable	H	A	At	Sx	Ab	Ax	Hs	Br	Pn	B	P
<i>Clinical Group</i>											
Range	7-50	6-58	0-9	0-2	0-12	0-32	2-33	1-20	0-15	0-3	3-19
Mean	25.82	26.45	2.0 (25%=0)	.09 (91%=0)	.85 (72%=0)	10.78	14.0	7.65	6.16	.43 (72%=0)	9.67
<i>Holtzman Group B</i>											
Range	0-43	2-47	0-12	0-2	0-4	0-20	0-22	0-17	0-8	0-6	1-15
Mean	16.42	22.11	2.38 (27%=0)	.09 (94%=0)	.29 (85%=0)	6-69	6.69	5.92	2.85	.63 (67%=0)	8.48

Note: As in Table 1 the distribution is similar in both groups for S, At, Sx, Ab, B. In the clinical group the mean for R is slightly lower but the percentage with no rejections is considerably higher than in Group C. Holtzman remarks that the R score for Group C is out of line with his other normal samples, and attributes it to sampling error or examiner bias (p 190). As expected, the means for RT, L, Sh are close. The means for FD, Br, P, are also close. There are some differences between the means for FA, V, Ax, Hs, Pn, C, I, H. All but the last three are in the expected direction, but none is significant. There are, however, significant differences for A (p < .05) and M (p < .01).

Table 4
HIT scores of 22 college students, seen in a clinic, compared with Holtzman's Group A norms.

Variable	RT	R	L	S	FD	FA	C	Sh	M	V	I
<i>Clinical Group Range</i>	8-43	0-18	4-51	0-5	56-106	38-49	5-26	1-18	4-70	1-27	1-18
Mean	21.95	1.81 (55% = 0)	27.40	.77 (50% = 0)	82.59	42.05	14.22	9.41	34.31	9.77 (None = 0)	7.22
<i>Holtzman Group A Range</i>	5-55	0-8	0-65	0-3	36-116	33-54	5-49	3-42	8-81	0-59	1-25
Mean	23.26	.88 (66% = 0)	23.68	.58 (63% = 0)	80.39	44.04	23.80	17.63	42.01	6.26 (20% = 0)	11.08
Variable	H	A	At	Sx	Ab	Ax	Hs	Br	Pn	B	P
<i>Clinical Group Range</i>	10-47	15-40	0-8	0-1	0-3	3-15	5-21	2-16	1-13	0-6	5-13
Mean	23.68	24.27	3.27 (13% = 0)	.13 (81% = 0)	.50 (72% = 0)	8.50	11.55	7.64	6.04	.81 (54% = 0)	9.64
<i>Holtzman Group A Range</i>	8-51	10-41	0-14	0-4	0.17	1-34	1-32	1-19	0.16	0-8	5-17
Mean	26.00	23.00	3.28 (15% = 0)	.37 (82% = 0)	1.92 (55% = 0)	12.18	13.00	8.86	6.16	1.47 (39% = 0)	11.03

Note: The differences between the means for R, S, At, Sx, B are small, with a high proportion of zero scores. The clinical group was, unexpectedly, lower for Abstract, with a narrower range and more zero scores. The differences for RT and L are, as expected, small. The differences were also small for FD, FA, H, A, Hs, Br, Pn, P. Those for C, Sh, M, Ax are somewhat larger, but none is significant. As in the other groups, the mean for V is higher in the clinical sample, with a lower proportion of zero scores, but the difference is smaller than that found in the younger groups, and the range for the clinical sample is narrower than for the normal one. The only variable showing a significant difference is I, where the clinical group is lower ($p < .02$). This is in accordance with expectation.

were not in accordance with the hypothesis. High *FD* is usually considered a favorable sign (Holtzman et al., 1961, p. 151). It cannot be attributed to higher intelligence, since the mean IQ for the high school group is actually lower than for the younger and older groups. Other possible factors are sampling error and examiner error. It may also be that the three groups—11th graders, firemen and housewives—amalgamated to form Holtzman's Group B are less similar than was supposed, and the norms consequently less reliable. The difference for *M* is of interest in that it appears in both junior and senior high school groups. It was hypothesized that in the clinical group the high and low scores for *M* would cancel one another out. Holtzman finds this variable associated with perceptual maturity and integrated thinking (Holtzman et al., 1961, p. 151), and also with pathological traits (Holtzman et al., 1961, p. 158). He notes, however, that *M* is low

in the abnormal samples. It would seem that in adolescents, a large number of movement responses may perhaps reflect a marshalling of inner resources to meet an emotional threat.

The data presented in this report illustrate the need for further research and normative studies on this potentially useful clinical instrument.

REFERENCES

- Holtzman, W. H. *The Holtzman inkblot technique, Forms A and B*. New York: Psychological Corporation, 1958.
- Holtzman, W. H., Thorpe, J. S., Swartz, J. D. & Herron, W. H. *Inkblot perception and personality*. Austin: University of Texas Press, 1961.
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Edwards Personal Preference Schedule Patterns in Psychiatric Populations

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Summary: The Edwards Personal Preference Schedule has been administered to various groups of psychiatric patients as a way of investigating the need patterns of patient populations. Results have been interpreted to indicate differences in social desirability and the inappropriateness of the normative population sample. These interpreted results do occur when an inappropriate normative group is selected, i.e., college norms for adult populations, as the need score measures from the EPPS are age related. Results of a less dramatic but more useful nature emerge when the data from previous investigations are re-analyzed in terms of the adult norms.

A number of investigators have become interested in the potential usefulness of the Edwards Personal Preference Schedule (EPPS) with clinical populations. As early as 1957, Klett was concerned with the problem of differences in social desirability which might exist between normals and a hospitalized population. His results indicated that items from the areas of Deference, Order, and Aggression were judged as more socially desirable and items in the score areas of Affiliation, Intracception, and Change were judged as less desirable when comparisons were made to Edwards college norms. Klett (1957) argued that if sufficient differences in social desirability were of a systematic nature it would appear in mean differences on these EPPS scales. In support of this hypothesis, Klett reported data collected by James Milam with 40 paranoid schizophrenic males. In comparison to the college normative group, they scored significantly higher on Deference, Order, and Endurance and significantly lower on Exhibitionism, Dominance, and Change. Affiliation and Endurance were also lower and higher in the paranoid group, however, they did not reach accepted levels of significance.

Data presented by Newman and Wischner (1960) were interpreted as support for Klett's hypothesis. Fifty male psychoneurotics were significantly higher than the college norms on Deference, Order, Abasement, Nurturance, and En-

durance, and significantly lower on Achievement, Exhibitionism, Dominance, and Heterosexuality. Kissinger (1966) reports EPPS scores for 62 females and 45 males the majority being diagnosed as chronic schizophrenics, in an attempt to verify Klett's hypothesis and to replicate the findings of Milam and Newman and Wischner. Results for his male population are basically in agreement with these previous studies and tend to indicate substantial consistency in the response pattern of neuropsychiatric patients. They could also indicate, as Kissinger has suggested, that the college standardization group norms are inappropriate for use with a psychiatric population. Kissinger (1966) noted that two factors likely accounted for the differences between the college norms and the psychiatric group. Either the strength of the EPPS scale needs is different in the two populations, or "a more reasonable hypothesis would be" as Klett's (1957) hypothesis suggested, the groups differ in their social desirability ratings of several EPPS score areas.

While these studies maintain consistency in their results, there does seem to be sufficient evidence to doubt the reported conclusions. The college norms presented by Edwards (1959) indicate that 84% of the college population is 24 years or younger and 93% is 34 years or younger. The means for Klett's and Milam's VA samples are not reported but likely approximate the VA sample of Newman and Wischner

whose mean age was 37.8 years, and Kissinger's male sample mean of 36.75 years. The norms of Koponen (1957) indicate that significant age differences exist; age differences are also reported by Gauron (1965). An analysis between Edwards' college norms and his general adult population (see Table 1) indicates significant differences. The only score areas which were not significantly different beyond the .01 level were Autonomy, Succorance, and Aggression. A comparison between the eight consistent areas of patient deviation from the college norms (Newman and Wischner, 1960; Kissinger, 1966) is identical in direction to the results of significant deviations of the adult

from the college norm populations. It can be argued that the reported areas of deviations in previous studies could be accounted for by the age differences, disregarding pathology, between the psychiatric populations and the college norms. Differences which exist between these psychiatric populations and normal subjects, would therefore be obscured because of the inappropriate selection of norms. Using a psychiatric population Gauron (1965) made comparisons with the adult norms and found quite different areas separating the hospitalized populations from normals. Gauron (1965) commented on the lack of agreement between his results and the results of Newman and

TABLE 1

Comparison Of Results With Two Normative Samples

EPPS SCALE	Male College Norms						Male Adult Norms				Female Adult Norms	
	Klett Hypotheses	Milam 40 Paranoids	N & W 50 Neurotics	Kissinger 45 Schizophrenics	Adult Norms		N&W 50 Neurotics	Kissinger 45 Schizophrenics	Gauron 159 Mixed		Kissinger 62 Schizophrenics	Gauron 162 Mixed
Achievement	0	0	L	L	L		0	0	0		0	0
Deference	H	H	H	H	H		0	0	0		H	L
Order	H	H	H	H	H		0	0	L		0	L
Exhibition	0	L	L	L	L		0	0	H		H	H
Autonomy	0	0	0	0	0		0	0	0		H	H
Affiliation	L	0	0	0	L		0	0	0		L	L
Intracception	L	0	0	L	L		0	0	H		0	0
Succorance	0	0	0	H	0		0	H	H		0	0
Dominance	0	L	L	L	L		L	L	L		H	0
Abasement	0	0	H	H	H		H	0	H		L	0
Nurturance	0	0	H	0	H		H	L	H		0	0
Change	L	L	0	L	L		0	0	0		L	0
Endurance	0	H	H	H	H		0	0	L		0	L
Heterosexuality	0	0	L	L	L		0	0	0		H	H
Aggression	H	0	0	0	0		L	L	L		0	0
Consistency	0	0	0	0	L		0	0	0		0	0

Note: — H = Hospital group significantly higher; L = Hospital group significantly lower; 0 = No significant difference

Wischnier (1960), but did not note the difference of the norms used in making the comparisons. Rather, he suggested that differences in the nature of the populations might resolve the observed discrepancies as Newman and Wischnier employed a VA sample. A re-analysis comparing the data of Newman and Wischnier (1960) with the adult norms (see Table 1) indicate that a number of similarities exist between his results and results reported by Gauron (1965).

Studies by Gauron (1965) and Kissinger (1966) also provide information on female populations. Kissinger's results with 62 females, mean age 38.14, indicate that there are 11 areas of difference when comparisons are made with college norms and eight areas of difference when compared to the adult female norms. Gauron's (1965) results from 163 psychiatric hospitalized females with a mean age of 30.57 indicate that seven areas are significantly different from the adult sample.

An analysis of the data from the studies investigated shows that the consistency of findings previously reported cannot be utilized in drawing conclusions about patient populations as these differences are largely related to age differences between the populations. The re-analysis using adult norms indicates, however, that much of the consistency between these studies remains. What does change are the areas of consideration and the direction of the score area deviations. For example, Gauron's (1965) findings indicate that the hospitalized population scores significantly lower than the adult norms on Order rather than higher, higher on Exhibitionism rather than lower, and lower on Endurance rather than higher. The differences which exist between the adult comparison results may in some way be related to the diagnoses of populations. The psychoneurotic population of Newman and Wischnier (1960) scored high on Abasement and Nurturance while the primarily chronic schizophrenic population of Kissinger scored high on Succorance and low on Nurturance. The mixed diagnostic population of Gauron (1965) differs from Newman and Wischnier in scoring significantly lower on Or-

der, Nurturance, and Endurance. Differences between diagnostic populations with the EPPS have also been observed by Goss (1966).

While the influence of factors such as education and socio-economic status on EPPS scores was uncontrolled in these studies it seems likely that the influence of these factors would be less important when the comparisons are made with adult norms in place of the more restricted college sample. Education and socio-economic status may, of course, account for much of the variance attributed to age in this report.

The results of analyses when comparisons are made with the adult norms provoke questions regarding previous conclusions. Contrary to Klett's (1957) hypothesis, the differences in social desirability which he stipulated seem to be a function of age and not patienthood; and the results of Newman and Wischnier (1960), and Kissinger (1966) do not necessarily indicate that Edwards's norms are inappropriate, unless of course, inappropriate age norms are selected. The areas of difference which emerge when the analyses are compared to adult norms seems more consistent with clinical data and typify a male who is less ordered, dominant, or aggressive. In addition, he seems to be introspective, attention and sympathy seeking, and guilt ridden. In contrast to this "weak" or "feminine" male is a "strong" or "masculine" female. She appears to be more exhibitionistic, autonomous, and heterosexual and less affiliative, ordered, and enduring. These results indicate the necessity for age and sex appropriate norms when making comparisons and graphically show that inappropriate comparisons yield inaccurate and misleading information.

REFERENCES

- Edwards, A. L. *Edwards Personal Preference Schedule Manual*. New York: Psychological Corporation, (revised) 1959.
- Gauron, E. F. Changes in Edwards Personal Preference Schedule needs with age and psychiatric status. *Journal of Clinical Psychology*, 1965, 21, 194-196.
- Goss, A. Predicting work success for patients on an industrial rehabilitation ward in a neuro-

- psychiatric setting. (Doctoral dissertation, University of Texas). Ann Arbor, Michigan: University Microfilms, 1966, No. 66-14381.
- Kissinger, R. D. The Edwards Personal Preference Schedule in a psychiatric setting. *Journal of Projective Techniques and Personality Assessment*. 1966, 30, 149-152.
- Klett, C. J. The social desirability stereotype in a hospital population. *Journal of Consultant Psychology*, 1957, 21, 419-421.
- Koponen, A. The influence of demographic factors on responses to the Edwards Personal Preference Schedule. (Doctoral dissertation, Columbia University) Ann Arbor, Michigan: University Microfilms, 1957, No. 57-4338.
- Newman, J. & Wischner, G. J. The performance of a hospitalized neuropsychiatric sample on the Edwards Personal Preference Schedule. *Journal of Clinical Psychology*, 1960, 16, 99-100.
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BOOK REVIEW

Moss, G. Scott. *Hypnosis in Perspective*. New York; The Macmillan Co., 1965, x + 196 + pp.). Price \$2.00.

This book admirably serves its purpose as proposed in the foreword of "The Critical Issues in Psychology Series" by Melvin H. Marx, General Editor. It is a source book for the undergraduate in psychology but in my opinion, the book goes beyond its stated objectives. It is provocatively written and will challenge the specialist as well as the novice. True, as Moss states, the average student does not need to be persuaded that hypnosis is an intriguing, complex and baffling phenomenon, but he does need to be guided to his sources of information. This his book does with rare clarity.

Specialists may well ponder why hypnosis has received so little attention either from the medical profession or from departments of psychology. Only one medical school offered suitable courses in hypnosis for practicing physicians at the time this book was written and psychologists did little better. It appears that students and the public demand far more than the professionals dare offer.

Taking the book, topic by topic in Part I, Inquiry and Argument, Moss gives intimations of fascinating vistas for the student to explore. He reports the sensational beginnings of public concern with hypnotism. Mesmer was the originator of modern hypnosis and the great figure of the day. His fate followed a now familiar pattern: He was expelled as a charlatan from the medical profession, and the French Academy, represented by a blue-ribbon panel of the day, disclaimed his theory of animal magnetism. "Mesmerism" was denounced as a definite menace to public morality and his results were attributed to "excitement of the imagination" which might well serve as the prototype of our more modern definitions.

Scott's book is raised far above the level of an interesting review of selected topics by a certain warmth of tone and an absence of

specialist-jargon; the student feels himself "inside" of many important and historical occasions and events. For example: one of the major medical debates of history—Charcot and the adherents of the Nancy school—is presented in an entirely understandable manner for undergraduates. Freud's debt and contribution to hypnosis, as well as his alarm concerning its power for sexual seduction, is presented in an intriguing and stimulating way. The student finds himself taken into these dialogues, so easy is the style of writing, almost as a participant.

Part II, The Selected Readings, are representative readings from modern references: Wells' *Experiments in Waking Hypnosis*, London's *Hypnosis in Children: An Experimental Approach*, and Sarbin's *Contributions to Role-taking Theory: I. Hypnotic Behavior*. Perhaps, the best reading is by Moss, Logan and Lynch on the *Present Status of Psychological Research and Training in Hypnosis: A Developing Professional Problem*. Here the dichotomy between the popular interest shared by laymen and students on the one hand, and on the other, the reluctance of medical men and of psychologists to satisfy this interest becomes evident. There were like divisions between physicians and psychologists. However, physicians in general, seemed more dubious of hypnosis than did psychologists. Harold Rosen, Chairman of the Committee on Hypnosis of the Council of the Medical Association, although acknowledging hypnosis as a valuable medical tool, emphasized the danger to both the physical and emotional life of a patient. (Both the British and American Medical Associations define hypnosis as a temporary condition of altered attention.) Moss fears that psychologists may relinquish their interest in hypnosis through indifference or antagonism but students, in the experience of the reviewer, greet each new scientific presentation of hypnosis with enthusiasm.

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Announcement

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ERRATUM

In the Bert R. Sappenfield paper titled "The revised CMM as a test of Perceived M-F and of Self-Report M-F," Volume 32, 1968, No. 1:

Page 93, Column 1, Study II, insert between the second and third lines the following: "of rating scales, the Ss were given the".

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Symposium

"Current Status of Some Projective Techniques"¹

Introduction

Bernard I. Murstein, *Chairman*

The current status of four projective techniques (TAT, Sentence Completion, Bender-Gestalt, and Projective Drawing) are evaluated by researchers who have contributed substantially to our knowledge concerning these techniques.² Dr.

Richard H. Dana presents a model for future research with thematic techniques; Dr. Philip A. Goldberg presents the results of his own survey on the standing of the Sentence Completion Test in the hierarchy of projective techniques; and Dr. Alexander Tolor evaluates the research findings on the Bender-Gestalt and Projective Drawing techniques and offers some guidelines to their use in the light of these findings. Finally, the chairman in the role of discussant attempts to synthesize the implications of these reports for the future use and status of projective techniques and projective tests.

¹ Co-sponsored by the American Psychological Association Division 12 and the Society for Projective Techniques and Personality Assessment, and presented at the APA Convention in Washington, D.C., September 4, 1967.

² Dr. Wayne H. Holtzman presented a paper on Inkblot Techniques at the Symposium. Due to the limitations of time, he was not able to touch on much more than a brief description of the Holtzman Inkblot Technique without getting to the cross-cultural research on this technique. Unfortunately, other commitments did not permit him to prepare a paper at this time on his cross-cultural research and consequently, the coverage of Inkblot Techniques is not represented in the following papers.

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Thematic Techniques and Clinical Practice

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Thematic techniques, including the Thematic Apperception Test, have a unique, nonclinical history. While their clinical usage begins with Murray's *Explorations in Personality* (1938), the research history properly begins with *The Achievement Motive* (McClelland, Atkinson, Clark, & Lowell, 1953). McClelland and his colleagues were not directly interested in what any thematic technique measured; they were concerned with the delineation of motives and the structure of motivational theory. Thematic techniques were merely a convenient vehicle, a sensitive mediator of fantasy. Two implications from this history are apparent today: (a) The formal application of design and statistics to this measurement was a decade in advance of similar applications to research with other projective instruments. (b) This particular research had absolutely no impact on clinical practice. The major effect has been a limited but reliable knowledge of what thematic techniques measure with only a dubious, unexplored degree of generality to clinical practice.

This paper reflects only one area of experimental research using thematic techniques, the assessment of human motives or needs. I will emphasize those needs which are most adequately represented by research, Achievement, Affiliation, and Hostility and include some content from the lesser need areas of Sex and Power. The labels need, motive, and drive are used interchangeably; the use of *n* before the need label indicates use of a McClelland et al. (1953) derived scoring system.

A model will be presented for systematically exploring those dimensions of this literature which are relevant for clinical practice. A summary across need areas will highlight problems for assessment in general. Finally, a research program will be proposed to deal with some of the implications for personality measurement.

A Model and Some Relevant Literature

The intent of using a simple model here is to label certain research areas as relevant for clinical application. These areas are card cue-value, subject variables, examiner variables, and arousal conditions. These four kinds of variables interact with one another to affect the expression in thematic content of any need. The task of inferring motive strength from the obtained score is thereby complicated. The present status of empirical knowledge in each area across needs differs markedly.

Cue-value

The use of picture stimuli of known cue-value for specific measurement purposes is not a novel idea. However, much early concern was directed at gross description of projective stimuli; e.g., Murray's separation of cards into "everyday" and "fantasy" series, Eron's norms (1950), Dana's *Perceptual Range* (1955) and Weiskopf's *Transcendence Index* (1950). These concerns, however, were with stimulus ambiguity and the relevance of ambiguity to the clinical usefulness of protocols. The use of thematic stimuli for specific measurement purposes also started in the early 1950's with attempts to scale pictures in order to provide a graded series of stimuli for one need.

At present, the experimental use of thematic techniques is for specific and limited measurements. It is necessary to know the cue-value of a particular picture across subject populations in order to be aware of what the card can or should stimulate as opposed to the obtained scorable content. Information on card cue-value is a first requirement for measuring need strength.

The literature for each need has suggested different solutions to the problem of how to determine cue-value. There have been many crude sortings of thematic stimuli for degrees of card-pull for any one need. Thematic studies of hostility or aggression have typically preferred subject

tive card selection (Breger, 1963; Feshbach, 1955; Hokanson & Gordon, 1958; Holzberg, Bursten, & Santuccioli, 1955; Nelson & Epstein, 1962; Pytkowicz, Wagner, & Sarason, 1967; Saltz & Epstein, 1963; Schaefer & Norman, 1967; Weatherly, 1962). Similarly, cards used in studies of *n* Sex have been subjectively chosen or especially designed to represent high or low cue-value (Clark, 1955; Epstein & Smith, 1957; Leiman & Epstein, 1961; Mussen & Scodel, 1955). Less frequently have been deliberately narrowed definitions of aggression (Kagan, 1956; Lesser, 1957; Shore, Massimo, & Mack, 1964). Murstein (1965) has employed cards which have been scaled for hostility by means of five conventional scaling techniques (Murstein, David, Fisher, & Furth, 1961). The results of this study provide cards of known cue-value, at least for a college population.

The selection of cards for achievement and affiliation is simplified by an available list for male subjects developed from a series of relevant studies (e.g., Birney, 1958; Jacobs, 1958; Haber & Alpert, 1958). In addition, there are agreed-upon criteria for achievement cards of high and low cue-value, 75% stories with achievement imagery and 25-50% stories with achievement imagery, respectively (Haber & Alpert, 1958).

Cue content for achievement should also be varied for similarity to work experience (Veroff, Feld, & Crockett, 1966), race (Cowan & Goldberg, 1967), and sex (Veroff, Wilcox, & Atkinson, 1953). Low cue-value pictures (Veroff, Atkinson, Feld, & Gurin, 1960) and early use of low cue-value stimuli are valid need measures while high cue-value pictures may measure guilt, at least for sex and hostility (Epstein, 1962). The order of card presentation may interact with stimulus value (Reitman & Atkinson, 1958), although when several motives are measured simultaneously by one set of cards, there do not appear to be any systematic order effects (Veroff et al., 1960).

It would be desirable to have a uniform method of determining cue-values across needs and across subject populations for standard cards used to measure each need. Similarly, a uniform definition of what

constitutes high, medium, or low cue-value is necessary. Murstein (1963) has argued for use of medium or low cue-value cards following strong arousal by instructions. Such cards are clear with respect to identification of hero but ambiguous regarding whatever is happening in the picture.

Subject Variables

Two major classes of subject variables or conditions have been identified. We assume that some continuous, relatively permanent conditions directly affect the intensity of need states. Examples are sex, race, religion, social class, education, intelligence, values, parental conditions, and family behaviors. There are also internalized states, sometimes relatively transitory, which influence the expression of need states in stories to pictures—generally by inhibition or suppression of scores. Examples are anxiety, conflict, defensiveness and defenses, guilt, and self-concept or self-esteem conditions. Not all conditions of either class have the same effects across need states.

Sex of subject is more relevant to *n* Ach than to *n* Aff. In order to measure *n* Ach in women, different stimulus cards (Lesser, Krawitz, & Packard, 1963), and different arousal conditions (Field, 1951) are required than for men. Whenever there is a differential definition by sex of what constitutes achievement or any other need state, then the thematic stimuli and the arousal conditions must reflect this definition.

Normative data from a representative, national sample of both sexes for *n* Ach, *n* Aff, and *n* Power clearly indicates the contributions of age, education, family income, occupation, and race (Veroff et al., 1960). The surprising fact from these data is that these subject variables show only limited effects. In other words, the ranges for percentages of high scores on these three needs are probably too small to enable individual prediction; nor may the impact of one subject variable be assessed in isolation from other relevant subject conditions.

Rosen (1961) has demonstrated interactive effects on *n* Ach of social class, family size, birth order, and age of mother. Similarly, while the fact of Negro race is relevant, the geographic region of child-

hood experience exerts as great an influence on obtained *n Ach* scores (Nuttall, 1964). Religion also influences *n Ach* with Jews, Catholics, and Protestants, respectively, obtaining decreasing scores in a representative, national sample (Veroff, Feld, & Gurin, 1962).

The origin of achievement motives and value associations toward achievement may be separated by age of inculcation (Rosen, 1956). Most research has dealt with the behavior of parents and their children which is associated with learning value orientations toward achievement (McClelland, Rindlisbacher, & deCharms, 1955; Morrow & Wilson, 1961; Rosen, 1959; Rosen & D'Andrade, 1959; Winterbottom, 1958).

The majority of studies representing this class of intrinsic subject variables are for *n Ach*. Only one *n Aff* study was found (Byrne, 1961b) while hostility studies minimize sex differences (Murstain, 1966) except for the differential impact by sex of insult arousal conditions on reported hostility (Pytkowicz et al., 1967).

The second class of subject conditions has been related to need scores by measures derived from the need scores themselves or by externally administered indices. The achievement motive has been separated into success and failure components (Atkinson, 1957). These success and failure components are measured by the positive and negative *n Ach* scoring categories, respectively (Heckhausen, 1967; Moulton, 1958). Separate measures include the Mandler-Sarason Test Anxiety Questionnaire (Atkinson & Litwin, 1960), scales for facilitating and debilitating anxiety (Alpert & Haber, 1960), and for cautious-defensive versus hopeful attitudes toward level of aspiration (Clark, Teevan, & Ricciuti, 1956). All measures indicate that anxiety or conflict over fears of possible failure serve to inhibit or distort obtained achievement scores (Sampson, 1963). Nonetheless, each measure apparently taps a different aspect of the failure component (Alpert & Haber, 1960).

Similarly, the positive and negative components of *n Aff* have been separated within the traditional scoring system (deCharms, 1957) and by independent affect categories (Byrne, McDonald, & Mikawa,

1963). A questionnaire has been used to measure guilt and inhibition as subject conditions influencing expression of sexual imagery in thematic content (Leiman & Epstein, 1961).

Hostility suppressor measures have been primarily external in application because hostility-aggression has not been scored by a McClelland et al. (1953) derived system. Typically, hostility-aggression is scored by ratings (Breger, 1963; Feshbach, 1955; McNeil, 1962; Mussen & Naylor, 1954; Purcell, 1956; Saltz & Epstein, 1963) or by a tally of scores from several dimensions (Kagan, 1956; Lesser, 1957; Schaefer & Norman, 1967; Shore, Massimo, & Mack, 1964; Weissman, 1964). The Hafner-Kaplan scale (1960) has received the most consistent usage (Murstain 1966; 1965).

A variety of subject conditions affecting expressed hostility-aggression have been investigated; e.g., anxiety (Lesser, 1958; Pittluck, 1950), conflict (Nelson & Epstein, 1962), defensiveness (Breger, 1963), guilt (Saltz & Epstein, 1963; Shore, Massimo, & Mack, 1964), response sets to over or under report hostility (Holzberg et al., 1955), and self-concept concerning hostility (Murstain, 1965).

Conspicuous in these studies of transient subject conditions is the jerry-built quality of measures. Each measure is a personal attempt by an investigator to recognize the impact of these subject conditions. Replication is rare, except for the use of the Mandler-Sarason scale which has an independent history of construction and validation. There have been few attempts to suggest the generality of these subject variables across needs. Only Epstein (1962) has stated a relationship between card cue-value, high or low, and measurement of guilt or need, respectively. Certainly the degree of cultural prohibition on direct expression of sexual or hostile-aggressive imagery in thematic content differs from similar inhibitions on affiliation or achievement imagery. However, these cultural proscriptions are intimately related to more permanent subject conditions such as social class and education.

Examiner Variables

Bernstein (1956) demonstrated that the

sheer presence of an examiner and individual differences between examiners influence the expression of affect on the Thematic Apperception Test. Studies of needs in thematic content typically use group administration. There are known differences, at least for *n Ach*, between individual and group administration, presumably due to the more immediate influence of the examiner on individual administrations (Broverman, Jordan, & Phillips, 1960; Himelstein, Eschenbach, & Carp, 1958; Lindzey & Heinemann, 1955; McClelland, 1958; Parrish & Rethlingshafer, 1954).

For *n Ach*, McClelland (1958) has cited prestige or status effects in an unpublished study and an elevation in scores produced by a female graduate student examiner. Experimenter effects on *n Ach* were not obtained under aroused and relaxed conditions (Haber & Alpert, 1958), although examiner effects were demonstrated in a national survey with individually administered cards (Veroff et al., 1960): *n Ach* for women and *n Power* scores for both sexes were significantly affected. Sexual imagery and *n Sex* scores are affected by examiners or social settings (Martin, 1964; Mussen & Scodel, 1955; Strivzer, 1961).

Apparently not all examiner effects are controlled even by group administration. Examiner effects do exist and presumably covary with subject conditions in terms of values and prohibitions on expression which are germane to each need being measured. Needs which have the greatest proscription on their public expression should show the greatest variability across examiners and be more influenced by individual administration.

Arousal conditions

Arousal conditions for various needs have been used primarily to demonstrate validity. When a comparison is made between relaxed and aroused conditions for a particular need, a significant increase in scores attests to the adequacy of the scoring categories. For *n Ach* in males the arousal conditions involve pressure for demonstration of intelligence and leadership ability created by instructions or tasks. For *n Ach* in women only social acceptance arousal has been used success-

fully (Field, 1951), although classification of female subjects by value orientation or male versus female role enables male arousal conditions to be effective (French & Lesser, 1964). Long-term arousal in the form of achievement training has also been used for *n Ach* (Arkava, 1967; Kolb, 1965; McClelland, 1966) and results in significant increases of external achievement indices.

The arousal conditions for affiliation typically have been sociometric ratings emphasizing fear of rejection (Atkinson, Heyns, & Veroff, 1954; Carrigan & Julian, 1966; deCharms, 1957; French & Chadwick, 1956; Shipley & Veroff, 1952). Reward contexts (Berkowitz & Howard, 1959) and both acceptance and rejection arousal conditions (Rosenfeld & Franklin, 1966) have also been used. Approach and avoidance *n Aff* motives lead to higher *n Aff* scores and a search for positive affective relationships or social acceptance (Rosenfeld & Franklin, 1966). McClelland has suggested that social acceptance may imply relief of avoidance motives, satisfaction of approach motives, or stimulation of renewed approach motives.

Arousal conditions for hostility-aggression have not been as readily manipulated and as Kelman suggests (1967) may have negative effects on subjects. Failure in a social setting results in increased thematic extrapunitive (Lindzey, 1950). Insulted subjects do produce more hostility than those who are less severely treated (Feshbach, 1955), although such insult may be observable only under specific cathartic conditions (Pytkowicz et al., 1967). Arousal may be less direct by means of a recorded case history (Hokanson & Gordon, 1958), an impersonal examiner and frustrating task (Breger, 1963), or by instructions to respond impersonally (Murstein, 1965).

The arousal of sex need has been accomplished for males by slides of nude women (Clark, 1955; 1952; Epstein & Smith, 1957; Martin, 1964; Strivzer, 1961), alcohol (Clark, 1955; Clark & Sensibar, 1955), and musical selections for both sexes (Beardslee & Fogelson, 1958).

The use of arousal conditions experimentally documents the existence of these

needs in thematic content, at least in terms of the particular scoring systems used. However, the arousal conditions for affiliation themselves may stimulate anxiety (Byrne, 1961a) or hostility (de Charms, 1957). Thus, adventitious subject conditions may be inadvertently stimulated by arousal conditions. Extremely strong arousal, either by card-cues or by arousal conditions, may stimulate defenses and avoidance (e.g., Anderson, 1962; Epstein, 1962; Scott, 1956). Too weak arousal by card-cues or experimental conditions may not elicit the desired thematic content at all or at too low a frequency or intensity to be distinguishable from themes representing other needs. One other caveat needs to be made concerning the use of arousal conditions. Such experimental conditions regardless of the need under investigation presuppose a test-retest paradigm with its inherent sensitivity to errors of measurement. The standard error of measurement has not been routinely calculated for any need, although the necessary data are probably available for *n Ach* and *n Aff*.

General Problems for Personality Assessment

This literature has certain characteristics which apply to all need areas. Thematic cards have been group administered. The pictures often differed from those TAT cards used in clinical practice, although for *n Ach*, *n Aff*, and *n Power* the cards used have been selected in terms of cue-values determined by previous research. However, for hostility-aggression, sex and other needs, no standard sets of cards have been used. A time limit per story has been uniformly imposed and stories were written in terms of a printed format for inclusion of specific content. Untrained persons can score stories with high reliability after about 12 hours of independent practice (Feld & Smith, 1958) using either an experienced scorer or comprehensive manuals as criteria (Reitman & Atkinson, 1958).

A bridge to future research which is relevant to clinical assessment will span several issues. (a) Simultaneous measurement of needs. (b) Assessment of anxiety

and conflict relative to each need by independent indices and/or by intraindividual comparison of need scores from neutral and aroused conditions. (c) Control of both classes of subject conditions. (d) Recognition of examiner influences. (e) Consensus on methods for measuring needs and demonstrated comparability of group and individual administrations.

In clinical practice human needs cannot be measured independently of one another. However, the literature has focused primarily on one need at a time. There are exceptions in which two or more needs are considered together but interaction effects are ignored (e.g., Littig & Yeracaris, 1963). Interaction effects have been demonstrated between achievement and affiliation which influence the choice of work partner (French, 1956), feelings about competence in others (Rosenfeld, 1966), and conformity behavior (Samelson, 1958). The most remarkable study (Groesbeck, 1958) used *n Ach* and *n Aff* scores from 11 TAT pictures with subjects from the classic assessment of VA trainees. Using a four-fold typology with trait ratings, self-report and sociometric questionnaires, responsibility and strong ethical values were associated with high scores on both needs.

When two or more needs are compared, the defensive maneuvers related to each need become more salient. For example, the usefulness of self-report or thematic measures for *n Aff* (as opposed to *n Ach*) is related to revealing or concealing defensive tendencies (Sherwood, 1966). Affiliation arousal may dampen the expression of a child's aggression (Gordon & Cohn, 1963), or stimulate hostility for subjects who have threat-oriented or negative affiliation imagery (de Charms, 1957).

Veroff et al., (1960) simultaneously sampled *n Ach*, *n Aff*, and *n Power* to provide limited normative data that improved our appreciation of separate studies on these needs. Predictions have been made for the relative strengths of six needs (*n Ach*, *n Aff*, *n Aggression*, *n Autonomy*, *n Deference*, *n Power*) in successful businessmen and higher scores for achievement and power were found (Cummin, 1967).

It is certainly feasible to measure several motives with a single set of as few as four cards (Reitman & Atkinson, 1958). Consensus on high frequency needs within and across relevant subject populations is prerequisite to a common matrix for research. The effects of interaction among needs of varying strength must be assessed on a systematic basis. The desired result would permit predicting behavioral consequences of particular patterns of need interactions. In addition, a knowledge of the frequencies of particular need patterns in different populations would serve as a preliminary structure for an empirically-derived set of personality statements and lead to theory construction.

Anxiety and conflict are subject conditions which have been shown repeatedly to influence the thematic expression of various needs. The impact of anxiety associated with arousal and conflict over expression of each need is measurable. There are at least three possible choices for assessment of anxiety-conflict influences on need expression: (a) independent indices; (b) indices derived from the same thematic content as the need score; (c) intraindividual comparison of neutral and aroused conditions.

While measures-in-context have been used (e.g., Shore, Massimo, & Mack, 1964), an independent index is desirable (e.g., Leiman & Epstein, 1961) since the effect is usually to inhibit or mask the expressed intensity or generality of a need. A knowledge of the personal defense structure and its relatedness to overt behavior should be inferable from such measures in conjunction with particular needs.

Needs cannot be measured adequately or uniformly under neutral conditions alone. This suggests that clinical assessment should undertake intraindividual comparisons between neutral and aroused conditions for each need state (Wallace, 1966). Such comparisons would afford an alternative procedure for studying the import and effects of anxiety or conflict upon thematic expression. For example, Martire (1956) noted that subjects who were high on *n Ach* for both neutral and aroused conditions had great discrepancies between self and ideal-self ratings for achievement related traits. In addition,

this tactic is supported by Epstein's conclusion (1962) regarding the differences in content elicited by pictures of high and low cue-value, guilt and a need measure, respectively.

The strength of particular needs and conflicts over their expression are related to two general classes of subject variables which may be labeled as "hard" or "soft," relatively permanent or temporary conditions, respectively. With respect to "hard" conditions, the problem is one of decision on what constitutes *relevant* subject variables which have a constant and uniform influence on need scores. Research must decide upon the relevant dimensions and then eventual standardization of thematic instruments must occur in terms of known dimensions. This is especially feasible for fixed dimensions of subject variability such as sex, social class, and education. Such standardization is less practical for such variables as parental values, child-rearing conditions, parental need strengths, and transient subject conditions. These subject variables have much greater interindividual variability and consequently demand individual appraisal rather than normative data for adequate control. Such appraisal can be predicated upon a research context which indicates replicated relationships of need scores to particular subject conditions.

Examiners do influence their subjects' responses. However, the problem for clinical assessment is to discover the extent and kind of influence exerted by each examiner. While there are some promising research models for exploration of bias such as eisegesis (Dana, 1966), experimenter-bias (Rosenthal, 1967) and social reinforcement (e.g., Krasner, Ullmann, & Fisher, 1964; Weiss, Ekman, Ullmann, & Krasner, 1965), there is nothing even remotely approaching standardized detection of bias and training to minimize bias in clinical settings. It would be indeed unfortunate if psychotherapy for diagnosticians, didactic or otherwise, were the only nostrum.

It is understood that consensus must occur on choice of methods for measuring both strength and generality of needs since different measures of the same need do not usually yield similar results. The

applicability of research results from a group-comparison method must be demonstrated. At present there is no guarantee that replication of studies with individually administered thematic stimuli will not be necessary. Finally, it should be emphasized that any research approach to definition and quantification of human behaviors does not mean that we should simultaneously abandon our subjective cue-utilization process and grand nonempirical vaultings from data to inference.

A Research Proposal

The problem for future research is to retain as much of the empirical history of needs scored from thematic content as possible while simultaneously generating findings which will have direct relevance for clinical assessment. It is proposed to examine five needs simultaneously, *n Ach*, *n Aff*, *n Power*, *n Hostility*, and *n Sex*. Scoring for all needs would involve use of standard directions and comprehensive manuals by trained scorers.

Pilot studies would permit selection of one high cue-value card for each need. These studies on individual male and female subjects, replicated for group administration, would demand rank-orderings of the five cards for each need. Such studies would be continued until consensus from individual and group administration indicated consistent ranks by need on high-cue cards across subject populations.

Once card selection had been satisfactorily accomplished, the design would control for sex, administration condition, interaction of needs, the use of arousal conditions, and an external measure of anxiety associated with the expression of each need. Replications would occur for different subject populations. A test-retest or repeated measurements paradigm would be employed with retest directions constituting arousal conditions for each need state. These specific arousal conditions are to be applied directly to the high cue-value cards representing that need. The other four cards are considered to be low cue-value for the aroused need. Thus, the need strength would be inferable from these four low cue-value cards. Generality of need state is assessable by the discrepancy

between scores on high and low cue-value cards. A separate measure for anxiety by need would suggest the meaning of differential scores for cards of high and low cue-values.

The main advantage of this design is the 2 x 2 x 2 factorial structure for administration (individual versus group), sex (male versus female) and condition (neutral versus aroused). The simultaneous and independent measurement of anxiety would facilitate individual interpretation of results. The major limitations concern the possible effects on the subject of arousal directions used with high cue-value cards and the assumption that the other four cards are of low cue-value for any particular need. There will be some documentation provided by the pilot study which, however, has positive results built into the rank-ordering task.

Patterns of frequencies by strength of single needs and from interactions of all needs would soon be available. External correlates for specific profiles could follow the MMPI research model for high-point codes. If the personal world is conceptualized as a selection of bands of varying widths (Heckhausen, 1967), then there would be individual differences in numbers of salient motives or needs, their intensity, and extensity or band width. A beginning might also be made in reliable clinical description based on assessment of clearly defined needs, their inhibition or freedom of expression, and their interrelationships. This would constitute one step toward eventual consensus on clinical activity and toward a model or personality theory used to encompass our clinical procedures.

We have suggestions already of uneven need representations within the national character (Veroff et al., 1960). Such an instrument, with the addition of other needs, would provide a standard, cross-cultural measure. Similarities and differences in so-called national character could provide a basis for studies of antecedent and consequent conditions from child-rearing practices to political behaviors.

REFERENCES

- Alpert, R., & Haber, R. N. Anxiety in academic

- achievement situations. *Journal of Abnormal & Social Psychology*, 1960, 61, 207-215.
- Anderson, R. C. Failure imagery in the fantasy of eighth graders as a function of three conditions of induced arousal. *Journal of Educational Psychology*, 1962, 53, 293-298.
- Arkava, M. L. Alterations in achievement motivation through counseling intervention. Unpublished Ph.D. dissertation, University of Wyoming, 1967.
- Atkinson, J. W. Motivational determinants of risk-taking behavior. *Psychological Review*, 1957, 64, 359-372.
- Atkinson, J. W., & Litwin, G. H. Achievement motive and test anxiety conceived as motive to approach success and motive to avoid failure. *Journal of Abnormal & Social Psychology*, 1960, 60, 52-63.
- Atkinson, J. W., Heyns, R. W., & Veroff, J. The effect of experimental arousal of the affiliation motive on thematic apperception. *Journal of Abnormal & Social Psychology*, 1954, 49, 405-410.
- Beardslee, D. C., & Fogelson, R. Sex differences in sexual imagery aroused by musical stimulation. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Berkowitz, L. & Howard, R. C. Reactions to opinion deviates as affected by affiliation need (n) and group membership interdependence. *Sociometry*, 1959, 22, 81-91.
- Bernstein, L. The examiner as an inhibiting factor in clinical testing. *Journal of Consulting Psychology*, 1956, 20, 287-290.
- Birney, R. C. Thematic content and the cue characteristics of pictures. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Breger, L. Conformity as a function of the ability to express hostility. *Journal of Personality*, 1963, 31, 247-257.
- Broverman, D. M., Jordan, E. J., & Phillips, L. Achievement motivation in fantasy and behavior. *Journal of Abnormal & Social Psychology*, 1960, 60, 374-378.
- Byrne, D. Anxiety and the experimental arousal of affiliation need. *Journal of Abnormal & Social Psychology*, 1961, 63, 660-662. (a)
- Byrne, D. Interpersonal attraction as a function of affiliation need and attitude similarity. *Human Relations*, 1961, 14, 283-289. (b)
- Byrne, D., McDonald, R. D., & Mikawa, J. Approach and avoidance affiliation motives. *Journal of Personality*, 1963, 31, 1-20.
- Carrigan, W. C., & Julian, J. W. Sex and birth-order differences in conformity as a function of need affiliation arousal. *Journal of Personality & Social Psychology*, 1966, 3, 479-482.
- Clark, R. A. The effects of sexual motivation on phantasy. In D. C. McClelland (Ed.) *Studies in motivation*. New York: Appleton-Century, 1955.
- Clark, R. A. Projective measurement of experimentally induced levels of sexual motivation. *Journal of Experimental Psychology*, 1952, 44, 391-399.
- Clark, R. A., & Sensibar, M. R. The relationship between symbolic and manifest projections of sexuality with some incidental correlates. *Journal of Abnormal & Social Psychology*, 1955, 50, 327-334.
- Clark, R. A., Teevan, R., & Ricciuti, H. H. Hope of success and fear of failure as aspects of need for achievement. *Journal of Abnormal & Social Psychology*, 1956, 53, 182-186.
- Cowan, G., & Goldberg, F. J. Need achievement as a function of the race and sex of figures in selected TAT cards. *Journal of Personality & Social Psychology*, 1967, 5, 245-249.
- Cummin, P. C. TAT correlates of executive performance. *Journal of Applied Psychology*, 1967, 51, 78-81.
- Dana, R. H. Clinical diagnosis and objective TAT scoring. *Journal of Abnormal & Social Psychology*, 1955, 50, 19-25.
- Dana, R. H. Eisegenesis and assessment. *Journal of Projective Techniques & Personality Assessment*, 1966, 30, 215-222.
- deCharms, R. Affiliation motivation and productivity in small groups. *Journal of Abnormal & Social Psychology*, 1957, 55, 222-226.
- deCharms, R., Morrison, H. W., Reitman, W., & McClelland, D. C. Behavioral correlates of directly and indirectly measured achievement motivation. In D. C. McClelland (Ed.) *Studies in motivation*. New York: Appleton-Century-Crofts, 1955.
- Epstein, S. The measurement of drive and conflict in humans: Theory and experiment. In M. R. Jones (Ed.) *Nebraska symposium on motivation*. Lincoln: University of Nebraska Press, 1962.
- Epstein, S. & Smith, R. Thematic apperception, Rorschach content, and ratings of sexual attractiveness of women as measures of the sex drive. *Journal of Consulting Psychology*, 1957, 21, 473-478.
- Eron, L. D. A normative study of the Thematic Apperception Test. *Psychological Monographs*, 1950, 64, No. 9 (Whole No. 315).
- Feld, S. & Smith, C. P. An evaluation of the objectivity of the method of content analysis. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Feshbach, S. The drive reducing function of fantasy behavior. *Journal of Abnormal & Social Psychology*, 1955, 50, 3-11.
- Field, W. F. The effects of thematic apperception upon certain experimentally aroused needs. Unpublished doctoral dissertation, University of Maryland, 1951.
- French, E. G. Motivation as a variable in work-partner selection. *Journal of Abnormal & Social Psychology*, 1956, 53, 96-99.
- French, E. G., & Chadwick, I. Some character-

- istics of affiliation motivation. *Journal of Abnormal & Social Psychology*, 1956, 52, 296-300.
- French, E. G., & Lesser, G. S. Some characteristics of the achievement motive in women. *Journal of Abnormal & Social Psychology*, 1964, 68, 119-128.
- Gordon, J. & Cohn, F. Effect of fantasy arousal of affiliation drive on doll play aggression. *Journal of Abnormal & Social Psychology*, 1963, 66, 301-307.
- Groesbeck, B. L. Toward description of personality in terms of configuration of motives. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Haber, R. N. & Alpert, R. The role of situation and picture cues in projective measurement of the achievement motive. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Hafner, A. J. & Kaplan, A. M. Hostility content analysis of the Rorschach and TAT. *Journal of Projective Techniques*, 1960, 24, 137-143.
- Heckhausen, H. *The anatomy of achievement motivation*. New York: Academic Press, 1967.
- Himelstein, P., Eschenbach, A. E., & Carp, A. Interrelationships among three measures of need achievement. *Journal of Consulting Psychology*, 1958, 22, 451-452.
- Hokanson, J. E. & Gordon, J. E. The expression and inhibition of hostility in imaginative and overt behavior. *Journal of Abnormal & Social Psychology*, 1958, 57, 327-333.
- Holzberg, J. D., Bursten, B., & Santuccioli, A. The reporting of aggression as an indication of aggressive tension. *Journal of Abnormal & Social Psychology*, 1955, 50, 12-18.
- Jacobs, B. A method for investigating the cue characteristics of pictures. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Kagan, J. The measurement of overt aggression from fantasy. *Journal of Social and Abnormal Psychology*, 1956, 52, 390-393.
- Kelman, H. C. Human use of human subjects: The problem of deception in social psychological research. *Psychological Bulletin*, 1967, 67, 1-11.
- Kolb, A. Achieving motivation training for underachieving high school boys. *Journal of Personality & Social Psychology*, 1965, 2, 783-792.
- Krasner, L., Ullmann, L. P., & Fisher, D. Changes in performance as related to verbal conditioning of attitudes toward the examiner. *Perceptual & Motor Skills*, 1964, 19, 811-816.
- Leiman, A. H. & Epstein, S. Thematic sexual responses as related to sexual drive and guilt. *Journal of Abnormal & Social Psychology*, 1961, 63, 169-175.
- Lesser, G. S. The relationship between overt and fantasy aggression as a function of maternal response to aggression. *Journal of Abnormal & Social Psychology*, 1957, 55, 218-221.
- Lesser, G. S. Conflict analysis of fantasy aggression. *Journal of Personality*, 1958, 26, 29-41.
- Lesser, G. S., Krawitz, R. N., & Packard, R. Experimental arousal of achievement motivation in adolescent girls. *Journal of Abnormal & Social Psychology*, 1963, 66, 59-66.
- Lindzey, G. An experimental examination of the scapegoat theory of prejudice. *Journal of Abnormal & Social Psychology*, 1950, 45, 296-309.
- Lindzey, G. & Heinemann, S. H. Thematic Apperception Test: Individual and group administration. *Journal of Personality*, 1955, 24, 34-55.
- Littig, L. W. & Yeracaris, C. A. Academic achievement correlates of achievement and affiliation motivations. *Journal of Psychology*, 1963, 55, 115-119.
- Martin, B. Expression and inhibition of sex motive arousal in college males. *Journal of Abnormal & Social Psychology*, 1964, 68, 307-312.
- Martire, J. G. Relationships between the self concept and differences in the strength and generality of achievement motivation. *Journal of Personality*, 1956, 24, 364-375.
- McClelland, D. C. *Personality*. New York: Dryden, 1951.
- McClelland, D. C. Methods for measuring human motivation. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- McClelland, D. C. Explorations in developing the achievement motive. Paper presented at the Western Psychological Association, April, 1966, Long Beach, California.
- McClelland, D. C., Rindisbacher, A., & deCharms, R. Religious and other sources of parental attitudes toward independence training. In D. C. McClelland (Ed.) *Studies in motivation*. New York: Appleton, 1955.
- McClelland, D., Atkinson, J. W., Clark, R. A. & Lowell, E. L. *The achievement motive*. New York: Appleton-Century-Crofts, 1953.
- McNeil, E. G. Aggression in fantasy and behavior. *Journal of Consulting Psychology*, 1962, 26, 232-240.
- Morrow, W. R., & Wilson, R. C. Family relations of bright high-achieving and under-achieving high school boys. *Child Development*, 1961, 32, 501-510.
- Moulton, R. W. Notes for a projective measure for fear of failure. In J. W. Atkinson, (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Murray, H. A. *Explorations in Personality*. New York: Oxford Press, 1938.
- Murstein, B. I. The relationship of expectancy of reward to achievement performance on an

- arithmetic and thematic test. *Journal of Consulting Psychology*, 1963, 27, 394-399.
- Murstein, B. I. Projection of hostility as a function of stimulus, background, and personality variables. *Journal of Consulting Psychology*, 1965, 29, 43-48.
- Murstein, B. I. Sex differences in TAT ambiguity, hostility, and projection. *Journal of Genetic Psychology*, 1966, 108, 71-80.
- Murstein, B. I., David, C., Fisher, D., & Furth, H. G. The scaling of the TAT for hostility by a variety of scaling methods. *Journal of Consulting Psychology*, 1961, 25, 497-504.
- Mussen, P. H. & Naylor, H. K. The relationships between overt and fantasy aggression. *Journal of Abnormal & Social Psychology*, 1954, 49, 233-240.
- Mussen, P. H. & Scodel, A. The effects of sexual stimulation under varying conditions on TAT sexual responsiveness. *Journal of Consulting Psychology*, 1955, 19, 90.
- Nelson, J. T. & Epstein, S. Relationships among three measures of conflict over hostility. *Journal of Consulting Psychology*, 1962, 26, 345-350.
- Nuttall, R. L. Some correlates of high need for achievement among urban northern Negroes. *Journal of Abnormal & Social Psychology*, 1964, 68, 593-600.
- Parrish, J. & Rethlingshafer, D. A study of the need to achieve in college achievers and non-achievers. *Journal of General Psychology*, 1954, 50, 209-226.
- Pittluck, P. The relationship between aggressive fantasy and overt behavior. Unpublished doctoral dissertation, Yale University, 1950.
- Purcell, K. The TAT and antisocial behavior. *Journal of Consulting Psychology*, 1956, 20, 449-456.
- Pytkowicz, A., Wagner, N., & Sarason, G. An experimental study of the reduction of hostility through fantasy. *Journal of Personality & Social Psychology*, 1967, 5, 295-304.
- Reitman, W. R. & Atkinson, J. W. Some methodological problems in the use of thematic apperceptive measures of human motives. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*, Princeton: Van Nostrand, 1958.
- Rosen, B. C. The achievement syndrome. *American Sociological Review*, 1956, 21, 203-211.
- Rosen, B. C. Race, ethnicity, and the achievement motive. *American Sociological Review*, 1959, 24, 47-60.
- Rosen, B. C. Family structure and achievement motivation. *American Sociological Review*, 1961, 26, 574-585.
- Rosen, B. C. & D'Andrade, R. The psychosocial origins of achievement motivation. *Sociometry*, 1959, 22, 185-218.
- Rosenfeld, H. M. Relationships of ordinal position to affiliation and achievement motives, direction and generality. *Journal of Personality*, 1966, 34, 467-480.
- Rosenfeld, H. M. & Franklin, S. S. Arousal of need for affiliation in women. *Journal of Personality & Social Psychology*, 1966, 3, 245-248.
- Rosenthal, R. *Experimenter effects in research*. New York: Appleton-Century-Crofts, 1967.
- Saltz, G. & Epstein, S. Thematic hostility and guilt responses as related to self-reported hostility, guilt, and conflict. *Journal of Abnormal & Social Psychology*, 1963, 67, 469-479.
- Samelson, F. The relation of achievement and affiliation motives to conforming behavior in two conditions of conflict with a majority. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Sampson, E. E. Achievement in conflict. *Journal of Personality*, 1963, 31, 510-516.
- Schaefer, J. B. & Norman, M. Punishment and aggression in fantasy responses of boys with antisocial character traits. *Journal of Personality & Social Psychology*, 1967, 6, 237-240.
- Scott, W. A. The avoidance of threatening material in imaginative behavior. *Journal of Abnormal & Social Psychology*, 1956, 52, 338-346.
- Sherwood, J. J. Self-report and projective measures of achievement and affiliation. *Journal of Consulting Psychology*, 1966, 30, 329-337.
- Shipley, T. E., Jr. & Veroff, J. A projective measure of need for affiliation. *Journal of Experimental Psychology*, 1952, 43, 349-356.
- Shore, M. F., Massimo, J. L. & Mack, R. The relationship between levels of guilt in thematic stories and unsocialized behavior. *Journal of Projective Techniques & Personality Assessment*, 1964, 28, 346-349.
- Strivzer, G. L. Thematic sexual and guilt responses as related to stimulus-relevance and experimentally induced drive and inhibition. Unpublished doctoral dissertation, University of Massachusetts, 1961.
- Veroff, J., Atkinson, J. W., Feld, S. C., & Gurin, G. The use of thematic apperception to assess motivation in a nation-wide interview study. *Psychological Monographs*, 1960, 74, No. 12 (Whole No. 499).
- Veroff, J., Feld, S., & Crockett, H. Explorations into the effects of picture cues on thematic apperceptive expression of achievement motivation. *Journal of Personality & Social Psychology*, 1966, 3, 171-181.
- Veroff, J., Feld, S. C., & Gurin, G. Achievement motivation and religious background. *American Sociological Review*, 1962, 27, 205-217.
- Veroff, J., Wilcox, S., & Atkinson, J. W. The achievement motive in high school and college-age women. *Journal of Abnormal & Social Psychology*, 1953, 48, 108-119.

Wallace, J. An abilities conception of personality measurement: Some implications for personality measurement. *American Psychologist*, 1966, 21, 132-138.

Weatherly, D. Maternal permissiveness toward aggression and subsequent TAT aggression. *Journal of Abnormal & Social Psychology*, 1962, 65, 1-5.

Weiss, R. L., Ekman, R., Ullmann, L. P., & Krasner, L. The context of reinforcement in verbal conditioning. *Journal of Clinical Psychology*, 1965, 21, 99-100.

Weisskopf, E. A. A transcendence index as a proposed measure in the TAT. *Journal of Psychology*, 1950, 29, 379-390.

Weissman, S. L. Some indicators of acting out behavior from the Thematic Apperception Test. *Journal of Projective Techniques & Personality Assessment*, 1964, 28, 366-375.

Winterbottom, M. R. The relation of need for achievement to learning experiences in independence and mastery. In J. W. Atkinson (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.

The Current Status of Sentence Completion Methods

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Status, a phenomenal concept, in that it applies to the *perceived* rank of an object within a group, is perhaps a particularly fitting and inappropriate concept against which to assess projective techniques. It is fitting in that the question of a projective technique's status deals with the perception of the projectivist, implying the influencing nature of all the variables with which the projectivist is otherwise concerned. The concept of status evades the question of reality in so far as it identifies reality with the perception.

The concept of status is inappropriate in so far as it is insufficient, and insufficient in so far as it carries with it little utility. In the pragmatics of clinical activity the prestige of a technique is clearly irrelevant; the power of the technique is crucial. It might be suggested that prestige enhances the user's confidence in the instrument. Indeed it might; there is, however, little evidence that clinical confidence is related to clinical accuracy. Lewis Goldberg (1959) found that nonprofessional judges with no training or experience with the Bender-Gestalt were more confident in their interpretations of the Bender than clinicians experienced with the technique. Further, Goldberg (1959, p. 29) found that "there was no relationship between individual diagnostic accuracy and degree of confidence!"

More impressively one might argue that status and worth are not independent, that the relative status of projective techniques is truly earned. Certainly this might be so. The argument becomes, then, an empirical question. Relative to sentence completion methods we have tried to provide at least the beginnings of an empirical answer.

Procedure

Late in the Spring of 1967 we sent a questionnaire concerning the status of sentence completion methods to 100 randomly selected members of the Society for Projective Techniques and Personality Assessment. Questionnaires were returned by 74 people, 69 of the questionnaires

were useable and form the basis for our observations on the status of sentence completion methods.

The Questionnaire

The questionnaire contained 11 questions: questions one and two asked the subject to indicate whether he used psychological tests for clinical and research purposes. Questions three and four dealt with the relative frequency with which the sentence completion was used clinically and for research. Questions five and six asked the subject to rank ten psychological tests in terms of frequency of clinical and research use. The ten tests ranked were: Rorschach, TAT, MMPI, Projective Drawings, Strong, Bender-Gestalt, Sentence Completion, EPPS, Blacky, and the Wechsler Scales.

Questions seven and eight asked the subject to indicate which sentence completion test he used most often clinically and which he used most often for research. Question nine presented the subject with twelve clinical tasks and asked him to indicate for each task whether the sentence completion seemed to him to be useful or not useful. The 12 clinical tasks were: intellectual evaluation, psychiatric diagnosis (adults), psychiatric diagnosis (children), personality evaluation (adults), personality evaluation (children), assessment of academic potential, determination of adjustment (adults), determination of adjustment (children), assessment of organicity, anxiety, aggression, and the evaluation of interpersonal attitudes. The 12 areas of clinical concern were suggested by Goldberg's (1965) examination of the validity of the sentence completion in a review of the method.

Question ten listed the same twelve tasks and asked the subject to indicate for each task the *one* test on which he would most rely. Finally, question eleven asked the subject to feel free in commenting on any aspect of the sentence completion, psychological testing in general, and on the questionnaire itself.

Results

1. As would be expected of members of the *Society*, 68 of 69 respondents reported that they used psychological tests for clinical purposes, and perhaps reflecting a service orientation, one third fewer or 45 of 69 respondents reported using psychological tests for research purposes.

2. As for the relative use of sentence completion methods, its clinical use, compared to other psychological tests was slightly below average, while its comparative research use was reported as decidedly below average. Four respondents reported above average research use of the sentence completion, 8 reported average use, and 32 less than average use. Respectively the figures for the clinical use of the method were: 21, 13, and 35.

3. The respondents' ranking of the tests in terms of clinical use was as follows: Rorschach, Wechsler Scales, TAT, MMPI, Projective Drawings, Sentence Completion, Bender-Gestalt, EPPS, Strong, and the Blacky.

4. The sentence completion tests used most often were, in the following order for both clinical and research use: the Rotter ISB, Custom or locally developed tests, and the Sacks. All together 17 published and 16 locally developed sentence completion tests were cited by the sample.

5. In evaluating the utility of the sentence completion there was virtually unanimous agreement (63-1) that the method was useful in the evaluation of interpersonal attitudes. For six other areas of clinical concern there was substantial agreement that sentence completion methods were useful: personality evaluation of adults (58-5), personality evaluation of children (49-10), assessment of adjustment in adults (58-5), assessment of adjustment in children (53-8), assessment of anxiety (58-7), and the assessment of aggression (59-6).

For two clinical tasks there was substantial disagreement as to the utility of the sentence completion: for the psychiatric diagnosis of adults 37 respondents thought the method was useful, 22 did not. For the psychiatric diagnosis of children it was 26 useful, 29 not useful. Further, there was substantial agreement

that the sentence completion was not useful for intellectual evaluation (14-48), assessment of academic potential (11-48), and the assessment of organicity (12-48).

6. While virtually all respondents found the sentence completion to be useful for at least some clinical tasks, their responses to question nine indicate that the sentence completion is at most of secondary or supplementary value. For none of the twelve tasks was the sentence completion the preferred test.

7. Finally, 40 of the 69 respondents exercised the option to comment freely. As would be expected there was a great variety of expression; nonetheless, there were a few themes repeated in the comments. The suggestion in the data that the sentence completion possesses supplementary value was made explicit by a number of respondents. Typical of these comments was: "Not very useful in itself, it is useful with the Rorschach and TAT in studying the type of defenses the person is using."

Several respondents were even less enthusiastic about the method. The major criticism of the technique tended to focus on the alleged undynamic nature of the responses characteristically elicited by the sentence completion. Typical of such attitudes were: "Frequently the sentence completion test results in bland, non-committal responses that are not very revealing except in general ways." Another comment was, "It's too easy for subjects to censor their responses to tests like the sentence completion." Several respondents felt that though the sentence completion wasn't a bad test, there were many tests that were better and that given the limited time available for testing they they chose not to use the sentence completion.

There were, of course, respondents who had a much higher regard for the method. Several respondents stressed the economy of the test. One respondent said the sentence completion provided a "breather" in the administration of a test battery. More positive attitudes were expressed, ranging from a terse "extremely useful with adolescents" to "I like sentence completion tests because of the opportunity they offer subjects to say

something about themselves and their feelings in their own written words." Several of the respondents who were most enthusiastic about the method thought it was most useful in sensitizing the clinician to fruitful areas of discussion in the clinical interview.

There were, additionally, other somewhat individual comments: one respondent said "the sentence completion is an excellent test, but I would not include it in a battery of my own choosing;" and another respondent confided, "I prefer having the sentence completion in a test battery, but for reasons unknown to me I haven't used one in several years."

There were relatively few comments about psychological testing in general or about the questionnaire. Question ten did, however, seem to irritate a number of people. The reaction from these respondents was generally that asking clinicians to specify *one* test on which they would rely for a particular clinical task was artificial and unreasonable.

Discussion

Two questions have guided the research and shall provide the context for discussion. One, what is the perceived relative standing and worth of the sentence completion method? Two, how veridical are these perceptions, and what evidence is there to support them?

The first finding that emerges from the data is that the sentence completion is used relatively more as a clinical than as a research instrument. This is so even after adjustment is made for the relative use of psychological tests for clinical and research work. To this observer, such data are puzzling. Probably the most characteristic property of the method is its flexibility. Elsewhere, (Goldberg, 1965), it has been noted that this flexibility has produced its own problems, but certainly the relative ease of constructing stems designed to elicit content in specific areas of research concern is undeniable. That the sentence completion has not "caught-on" as a research instrument would apparently seem clear, why this should be so is less clear.

As for the relative clinical use of

psychological tests, the data from this research are in substantial agreement with Sundberg's (1961) systematic survey of the clinical use of psychological tests. Specific to the sentence completion, Sundberg found it to rank second only to the MMPI among group tests of personality. In this survey the sentence completion was ranked just ahead of the MMPI in terms of clinical use.

Also consistent with Sundberg's data is the report by the present sample that the Rotter ISB was the sentence completion form most commonly used. A concern previously noted (Goldberg, 1965), that sentence completion tests with most research support might not be the tests most used in clinical practice is apparently groundless. Another concern that emerged from the same review of the sentence completion literature, that locally developed tests, often with gratuitous variations in procedure and structure, were in wide use, is supported by the data. The obvious dangers of such practices is that data comparability is compromised and standardization of the method is retarded.

The data bearing most directly on the questions guiding this research would seem to be contained in the respondents' evaluation of the method's utility in the twelve clinical areas. Let us first review the tasks for which the sample judged the sentence completion not to be useful. The sample's rejection of the method for intellectual evaluation and the assessment of academic potential would seem well justified on both logical and empirical grounds. Though Copple (1956) has developed a sentence completion form to measure "effective intelligence," the evidence is clear that the clinician is well advised to maintain his preference for standard tests of intelligence in the assessment of intelligence and academic potential.

The sample's rejection of the sentence completion for the evaluation of organicity would seem similarly well founded. There is little or no research evidence to suggest that the method would be effective for such a task. Yates (1954), in fact, concludes that the determination of organic brain damage is a difficult task not successfully accomplished by any psycho-

logical test. Certainly traditional methods of treating sentence completion responses would seem inappropriate for diagnosing organic conditions. It is possible that a formal analysis of sentence completion responses, dealing with such variables as reaction time, grammatical errors, length of completion, and the like might be a more sensitive use of the method for organic problems than the more standard content analysis.

In the area of psychiatric diagnosis the sample was divided in its opinion of the method's utility. Nonetheless, what research has been reported in this general area has been favorable to the method. Rotter and Willerman (1947), Sacks (1949), Sacks and Levy (1950), Wolkon and Haefner (1961) all achieved encouraging results using sentence completion methods in psychiatric assessment. In spite of these data it is true that there has as yet been no systematic examination of the sentence completion's power in differential diagnosis. Further, the activity of psychiatric diagnosis itself is not free of ambiguity (cf. Schafer, 1948). Differences among the respondents' evaluation of the method's utility might have been tied to differences in the perceived nature of the clinical task.

One additional comment is, perhaps, in order. Though data bearing on the issue of differential diagnosis are not available, a substantial research literature suggests that the sentence completion is useful for a variety of psychiatric tasks. Jenkins (1961), using the Miale-Holsopple, and Wolkon and Haefner (1961), using the Stotsky-Weinberg, were successful in predicting improvement in schizophrenics. Hiler (1959), using the Michigan Sentence Completion Test, was successful in predicting continuation in psychotherapy for a group of VA psychotherapy patients. Severity of psychiatric disturbance was accurately assessed by Rotter and Willerman (1947) using the ISB, and by Sacks and Levy (1950) using the Sacks Sentence Completion Test. A review of additional research attesting to the psychiatric utility of the method may be found in Goldberg (1965).

The sample's faith in the utility of the method for the assessment of anxiety and

aggression would, once again, seem to be justified by the available research data. Bieri, Blacharsky, and Reid (1955) found a correlation between the ISB and the Taylor MAS of .46, significant at the .01 level. Renner, Maher, and Campbell (1962) have more recently developed a scoring manual for anxiety, dependency and hostility to be used with the ISB. Stricker and Dawson (1966), using this manual achieved an interscorer agreement of 95%. Lazarus, Erickson and Fonda (1951) and Kimball (1952) have also found the sentence completion useful in assessing aggression.

The sample's virtually unanimous agreement that the sentence completion was useful in evaluating interpersonal attitudes has impressive research support. Attitudes toward old people (Golde & Kogan, 1959), attitudes toward peers and parents (Harris & Tseng, 1957), toward Negroes (Brown 1950) have all been assessed with the sentence completion. Indeed, even in the absence of relevant data, on inspection the sentence completion would seem a likely device for measuring interpersonal attitudes. By imposing sufficient structure on the stem, the tester can almost prescribe the response category. Golde and Kogan (1959), for example, used the following stem:

"When I am with an old person, I . . ."

It is probably possible to devise completions to such a collection of stems that would not yield expressions of some attitudes toward old people, but it would seem unlikely. The question that might be raised, however, is how meaningful are the expressions of attitudes produced by such psychometric arm-twisting? Rotter and Rafferty (1950, p. 3) tell us: "The responses tend to provide information that the subject is willing to give rather than that which he cannot help giving". Perhaps, then, a high degree of stem structure forces the subject to deal with a given topic with the subject continuing to maintain control over the manner in which he deals with the topic.

Such speculation again questions the worth of sentence completion responses. But in light of a considerable research literature it would seem undeniable that the respondents were right in regarding

the sentence completion as a useful test for the assessment of interpersonal attitudes. It should, however, be noted that the respondents regarded the sentence completion as only second best to the TAT for this clinical task. It is not possible to decide on the basis of research evidence whether the sample was justified in its relative preference. Systematic studies comparing the relative efficiency of the sentence completion to other major psychological tests across areas of psychological concern have yet to be performed.

The question of relative preference or reliance becomes most marked when we consider the area of general personality evaluation. The sample was in substantial agreement that other tests were more useful. Again, the research evidence is favorable to the sentence completion. It does seem clear (cf. Goldberg, 1965) that the method can make a contribution to personality evaluation, the comparative utility of the method is anything but clear.

Up to now in discussing the utility and comparative utility of tests, we have avoided a discussion of this test user. It is, of course, a wretched platitude to say that a test is only as good as the person using the test. It seems equally obvious that a tester can only be as good as his test will allow him to be. Thus, we nail down the principle that people use tests and that people who use tests would be better users of tests if they had better tests to use.

There is considerable evidence to suggest that a clinician's selection of a test and his ability to use that test profitably are not perfectly tied to the inherent properties of the instrument. Levy and Orr (1959) have identified *professional setting*, and Peskin (1963) *regional factionalism* as determinants of test preference.

In regard to the sentence completion, Murstein (1965, p. 778) suggests that one reason it has been used less often than other projective techniques is because "it is not as glamorous as the Rorschach and the TAT and has little of the mystical about it to inspire a cult" (p. 778).

It would seem, then, that the sample's view of the sentence completion as a useful test for personality evaluation conforms to the data. The accuracy of the

sample's relative preference for the method would seem an open question, but a question answered by clinicians in part on the basis of extra-test variables of dubious legitimacy.

For the determination of psychological adjustment the picture is again the same. The sample agreed that the sentence completion was useful, this view is in accord with the research literature; the sample continued to prefer other tests for this task and, once again, definitive comparative studies are not available by which the sample's preference might be evaluated.

It must be noted, however, that it is precisely in the area of assessing adjustment that the supporting evidence for the sentence completion is most impressive. This is especially true for the Rotter ISB. In numerous studies (Barry, 1950; Churchill & Crandall, 1955; Goldberg & Stark, 1965; Morton, 1955; Rotter, Rafferty & Schachtitz, 1949; Rotter, Rafferty & Lotosof, 1954) the ISB has proven to be a successful and efficient technique for the evaluation of adjustment. Though the ISB has received the bulk of the research support in this area, other sentence completion tests have also done well in assessing adjustment (Cass, 1952; Rychlak, Mussen & Bennett, 1957; Sacks, 1949).

In regard to the use of the method for determining adjustment, there is perhaps, in addition to the speculative extra-test variables, another, more intrinsic factor that may be operating to curtail reliance on the technique. The research support cited for the ISB is tied to an objective, single-variable scoring system. Such a method of treating responses is admittedly undynamic and yields nothing in the way of surplus information about the subject.

One assigns a score of 0 to 6 to the completion by matching it to a set of principles and examples in the scoring manual, adds the 40 scores to achieve a summary score, and the number thus arrived at stamps the subject as adjusted or not. (Typically, the cutting score used for the ISB is 135.) Thus, at least the method of treating the response is in the best, or worst, traditions of Minnesota empiricism. In spite of, or more probably because of its narrowness, the test is an efficient and economical screening device for maladjust-

ment. Further, it seems more than to hold its own with its rival, the MMPI, when used similarly (cf. Kleinmuntz, 1963).

And so, what is the relationship of the sentence completion's status to reality? If it is clear that we are, perhaps arbitrarily, anchoring reality in the research literature, it would seem clear that the relationship is in part uncertain, but in general is a fairly strong one. In choice of sentence completion form, in rejection of the method for specific areas of clinical concern, in attributing utility to the method in other areas, the respondents were entirely consonant with the research literature. In regard to relative preference the respondents were on less firm grounds. But here too, there was consonance; the respondents' shaky position is entirely consistent with the shaky nature of the data. One struggles not to conclude a review with the imperative that *more research is needed*. But it is.

REFERENCES

- Barry, J. R. The relation of verbal reactions to adjustment levels. *Journal of Abnormal & Social Psychology*, 1950, 46, 647-658.
- Bieri, J., Blacharsky, E., & Reid, J. W. Predictive behavior and personal adjustment. *Journal of Consulting Psychology*, 1955, 19, 351-360.
- Brown, Shirley W. The use of an incomplete sentences test for the study of attitudes towards Negroes. Unpublished doctoral dissertation, Ohio State University, 1950.
- Cass, Loretta K. An investigation of parent-child relationships in terms of awareness, identification, projection and control. *American Journal of Orthopsychiatry*, 1952, 22, 305-313.
- Churchill, Ruth & Crandall, V. J. The reliability and validity of the Rotter incomplete sentences test. *Journal of Consulting Psychology*, 1955, 19, 345-350.
- Copple, G. E. Effective intelligence as measured by an unstructured sentence completion technique. *Journal of Consulting Psychology*, 1956, 20, 357-360.
- Goldberg, L. The effectiveness of clinicians' judgments: The diagnosis of organic brain damage from the Bender-Gestalt test. *Journal of Consulting Psychology*, 1959, 23, 25-33.
- Goldberg, P. A. A review of sentence completion methods in personality assessment. *Journal of Projective Techniques & Personality Assessment*, 1965, 29, 12-45.
- Goldberg, P. A. & Stark, M. J. Johnson or Goldwater?: Some personality and attitude correlates of political choice. *Psychological Reports*, 1965, 17, 627-631.
- Golde, Peggy & Kogan, N. A sentence completion procedure for assessing attitudes toward old people. *Journal of Gerontology*, 1959, 14, 355-360.
- Harris, D. B. & Tseng, S. C. Children's attitudes toward peers and parents as revealed by sentence completions. *Child Development*, 1957, 28, 401-411.
- Hiller, E. W. The sentence completion test as a predictor of continuation in psychotherapy. *Journal of Consulting Psychology*, 1959, 23, 544-549.
- Jenkins, R. L. Quantitative aspects of sentence completion in the study of the improvement of schizophrenic patients. *Journal of Projective Techniques*, 1961, 25, 303-311.
- Kimball, Barbara. The sentence-completion technique in a study of scholastic underachievement. *Journal of Consulting Psychology*, 1952, 16, 353-358.
- Kleinmuntz, B. MMPI decision rules for the identification of college maladjustment: A digital computer approach. *Psychological Monographs*, 1963, 77, Whole No. 577, 1-22.
- Lazarus, R. S., Erickson, C. W., & Fonda, C. P. Personality dynamics and auditory perceptual recognition. *Journal of Personality*, 1951, 19, 471-482.
- Levy, L. H. & Orr, T. B. The social psychology of Rorschach validity research. *Journal of Abnormal & Social Psychology*, 1959, 58, 79-83.
- Morton, R. B. An experiment in brief psychotherapy. *Psychological Monographs*, 1955, 89, 1-17.
- Murstein, B. I. (Ed.) *Handbook of projective techniques*. New York: Basic Books, 1965.
- Peskin, H. Unity of science begins at home: A study of regional factionalism in clinical psychology. *American Psychologist*, 1963, 18, 96-100.
- Renner, K. E., Maher, B. A., & Campbell, D. T. The validity of a method for scoring sentence-completion responses for anxiety, dependency, and hostility. *Journal of Applied Psychology*, 1962, 46, 285-290.
- Rotter, J. B. & Rafferty, Janet E. *Manual: The Rotter incomplete sentences blank*. New York: Psychological Corporation, 1950.
- Rotter, J. B., Rafferty, Janet E., & Schachtitz, Eva. Validation of the Rotter incomplete sentences blank for college screening. *Journal of Consulting Psychology*, 1949, 13, 348-356.
- Rotter, J. B., Rafferty, Janet E., & Lotsof, A. B. The validity of the Rotter incomplete sentences blank: High school form. *Journal of Consulting Psychology*, 1954, 18, 105-111.
- Rotter, J. B. & Willerman, B. The incomplete sentence test. *Journal of Consulting Psychology*, 1947, 11, 43-48.
- Rychlak, J. F., Mussen, P. H., & Bennett, J. W.

- An example of the use of the incomplete sentence test in applied anthropological research. *Human Organization*, 1957, 16, (1), 25-29.
- Sacks, J. M. The relative effect upon projective responses of stimuli referring to the subject and of stimuli referring to other persons. *Journal of Consulting Psychology*, 1949, 13, 12-30.
- Sacks, J. M. & Levy, S. The sentence completion test. In L. E. Abt & L. Bellak (Eds.), *Projective psychology*. New York: Knopf, 1950, pp. 357-402.
- Schafer, R. *The clinical application of psychological tests: diagnostic summaries and case studies*. New York: International Universities Press, 1948.
- Stricker, G. & Dawson, D. D. The effect of first person and third person instructions and stems on sentence completion responses. *Journal of Projective Techniques and Personality Assessment*. 1966, 30, 169-171.
- Sundberg, N. D. The practice of psychological testing in clinical services in the United States. *American Psychologist*, 1961, 16, 79-83.
- Wolkon, G. H. & Haefner, D. P. Change in ego strength of improved and unimproved psychiatric patients. *Journal of Clinical Psychology*, 1961, 17, 352-355.
- Yates, A. J. The validity of some psychological tests of brain damage. *Psychological Bulletin*, 1954, 51, 359-379.

The Graphomotor Techniques¹

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My plan is to offer some comments about the Bender-Gestalt Test based on both selected research findings and my clinical experience with this instrument. As for the projective drawing methods, I will limit my discussion to personal reactions that have evolved from some years of using projective drawings for diagnostic purposes.

The Bender-Gestalt Test

The Bender-Gestalt Test, various survey findings (e.g., Sundberg, 1961) repeatedly indicate, is the third or fourth most frequently employed diagnostic instrument in the entire armamentarium of the contemporary clinician.

Let us turn to a brief consideration of the multitude of purposes for which this test has already been used. Perhaps the simplicity of the administration and the apparent facility of interpretation have resulted in the Bender-Gestalt Test being employed for virtually all clinical problems without sometimes sufficient attention being devoted to the question of whether the instrument is valid for a particular purpose or not. Thus, for example, the Bender-Gestalt Test, although originally considered primarily of value as a maturational test of performance in the visual-motor area, has been employed for the identification of problems of mental retardation, subject disabilities (especially reading difficulties), personality dynamics, the diagnosis of organic brain abnormality, the identification of patients with psychotic dysfunctioning, the determination of anxiety states, psychosomatic conditions, sexual disturbances, cultural differences, psychoneurotic conditions, characterological defects, including those in which alcoholism represents the primary manifestation, malingering, and the effects

of physiological alterations, such as those induced by psychopharmacological agents. In some instances the test has even been employed as a simple "buffer" that would permit the examiner to establish rapport with his patients in a relatively non-anxiety producing situation prior to his moving into presumably deeper and more dynamically-laden spheres of the personality.

Just as the applications of the Bender-Gestalt Test have become increasingly diverse, so too there has been an increased proliferation in modes of administration and in methods of interpretation of the test data. In regard to the variations in administration, there are such procedures as the tachistoscopic. Also, patients have been requested, following the original reproduction of the designs, to improve upon them so as to make them "better." Some examiners have relied on recall procedures, and others have obtained associations to the specific designs following their drawing. One clinician even suggested that associations obtained in response to the drawings be then inserted into a word association list in order to obtain further clarification of the meaning to the patient of the associated word. Then, in the event that even this method failed to clarify sufficiently the meaning of the word, it was recommended that the examiner re-introduce the secondary or tertiary response word in a new list of word associations until clarification is obtained. In some work which was performed by Tolor (1960) and by Schulberg and Tolor (1962), the Semantic Differential technique was employed. This procedure permitted the investigators to elucidate the connotative meanings generally attributed to each of the Bender-Gestalt designs both by normals and by various groups of psychiatric patients.

In regard to the variegated modes of interpretation of the Bender-Gestalt Test data, the global inspection methods appear to be those which are most commonly employed by clinicians. Although these methods have the merit of simplicity

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and brevity, they lend themselves particularly to "wild" unverified hypothesizing and the making of inferences which lack specificity in that they may be equally applicable to many different groups of patients. The other main approach involves assigning either specific scores to the deviations from the model, or identifying test "patterns" that are allegedly frequently associated with specific nosological categories. These approaches, including the ones developed by Hutt and Briskin (1960), by Pascal and Suttell (1951), and by Kopitz (1960), are in some instances not overly time-consuming for the ordinary clinician. Others, however, most notably that initially employed by Billingslea (1948) which required fifteen hours of scoring to define 38 factors which could be measured by means of 137 indices, are obviously unnecessarily complicated and of little use to the clinician, even though they may be of some value to the researcher with a high level of frustration tolerance. In general, clinicians have displayed a great deal of reluctance to employ objective scoring systems with the Bender. The available evidence indicates that high reliabilities are attained irrespective of the specific scoring method employed, that the rater need not be endowed with any very special talents or have very extensive specialized training, and that, as a matter of fact, there are times when individuals with less training fare much better in their evaluations of the Bender-Gestalt than do individuals who are more sophisticated in their training. Perhaps the most justifiable reason for clinicians to ignore scoring systems altogether is their consistent failure to display greater efficacy than more intuitive approaches to the evaluation of individual protocols.

Now, let us turn to the clinical utility of the Bender-Gestalt Test in dealing with specific problems for which it has frequently been utilized. I would venture to say that much, if not most, of the inferences commonly made about the individual, based on the Bender-Gestalt Test, are either so nonspecific or so inaccurate as to be either meaningless or misleading. This is not to say, however, that the test, if used properly for more delimited purposes, does not hold considerable promise.

In regard to the projective use of the Bender, the basic assumption underlying this application holds that when the patient reproduces the stimulus figures which are in full view, any deviations from the standard model as well as the drawing style used, will, at least in part, be reflective of his own adaptive modes. While it is certainly true that the Bender task, by its basic requirement that the individual reproduce nine spatial configurations from specific models, imposes certain limitations on the possible range of obtained responses, there remains a sufficient breadth of variation of expressive drawing patterns to enable each individual clearly to place his unique personality stamp on the task. As a matter of fact, the intermediate degree of structure provided by this test may very well have a salutary effect in reducing the number of wild interpretive conjectures which a more ambiguous task might promote. In a very real sense, then, the stimuli offer definite controls for evaluative guide points as do the norms in objective paper-and-pencil personality tests without, however, introducing certain disadvantages which are inherent in the latter approach. Despite this, the Bender-Gestalt Test was not, until fairly recently, and is not, even currently in some circles at least, recognized as an appropriate technique for personality evaluation.

When one attempts to buttress the argument for the projective use of the Bender-Gestalt Test for the elucidation of personality dynamics, one finds embarrassingly few supportive studies in the literature. For example, a review of the literature (Tolor & Schulberg, 1963) encompassing studies focusing on the relationship between the amount of ego strength inferred and the degree of accuracy of the Bender-Gestalt drawings indicates that there is no convincing evidence currently available to support the hypothesis that ego strength is consistently and positively related to Bender test performance either in patients or in non-patient groups.

There are also a number of studies in which specific personality hypotheses were investigated using the Bender-Gestalt Test as a principal technique. The results

of these studies lead one to seriously question the specificity of the Bender-Gestalt Test signs, as they are commonly employed.

When the relative validity of the Bender-Gestalt Test for personality evaluation is compared to other psychological measures, the findings are quite inconsistent in that sometimes the Bender appears to be a more accurate measure whereas at other times the findings based on the Bender-Gestalt Test result in less valid predictions. In part, these differences may be related to whether overt or covert traits are being predicted as well as the nature of the criteria used and the degree of sample homogeneity. In any case, the predictive validity of the Bender-Gestalt Test, as for the other projective techniques, is generally quite poor and does not warrant individual case predictions to be made.

It should be possible, it has been argued, to use the Bender-Gestalt Test particularly for the diagnosis of psychoneurotic conditions and character disorders, since the foundations for perceptual and motoric functions are learned early in life at a time when affective experiences leave their distinctive marks on these developing functions. It has even been assumed that perceptual motor tests have a distinct advantage over language-based tests since words seem often to have entirely different meanings to the developing child, who functions at a different symbolic and conceptual level, as compared to the adult. The language of adults, therefore, may not be capable of recapturing the totality of the early experience nearly as well as the perceptual and motoric styles which have become essential ingredients of the personality. When the evidence based on research is examined, however, a mixed picture with inconsistent findings emerges as to whether the Bender-Gestalt Test is useful in differentiating groups of neurotics from groups of psychotics in general or from groups of schizophrenics in particular. Such differentiation is at least as difficult for character and behavior disorders as it is for the psychoneurotic conditions, if not more so. It must be concluded, therefore, that the Bender-Gestalt Test is not a particularly

valid instrument for the group differentiation of either neurotic or character and behavior disorders, and making valid individual diagnostic decisions in this area is nearly impossible.

There is also no convincing evidence on the Bender-Gestalt Test of the presence of an "alcoholic test pattern" nor of the presence of the presumed personality dynamics that are often ascribed to the alcoholic. There is, however, some suggestion that the overall Bender performance of groups of alcoholics is somewhat impaired. One area in which the Bender-Gestalt has demonstrated considerable success is in the identification of malingerers or simulators. Perhaps, then, this test should be used more generally with individuals who are charged with criminal offences in which the defense plea is one of severe emotional disturbance.

The most frequent use of the Bender-Gestalt Test has been for purposes of diagnosing organic brain pathology. Here the problem is especially acute since one must not only control, as usual, for the base rate of the population examined but one encounters the conceptual problem of what is meant by "organicity". Brain damage cannot be considered to be a unitary diagnostic entity. For example, recent research has demonstrated that the acuteness or chronicity of an organic brain lesion represents an important variable in determining the psychological effects of brain injury. Other important parameters affecting the degree of organic impairment manifested is the location of the lesion, its size, its diffuseness or focalization, the rate of its change, the degree of its activity, and its relation to the premorbid personality. Further complicating the problem of ascertaining the validity of the Bender-Gestalt Test as an organic measure is the difficulty of finding generally agreed upon criteria of organicity. These problems notwithstanding, there are a number of studies presenting convincing evidence that the Bender performance of diverse organically impaired groups can be successfully differentiated from groups of comparable non-organic psychiatric patients and from normals. This conclusion applies equally well to children and adults, and seems inde-

pendent of the specific method of Bender evaluation utilized.

Incidentally, the Bender can also quite consistently discriminate between psychotics and normals on a group basis.

The presence of rotations in adults and children has often been used as a Bender indicator of organic involvement, and, with the possible exception of mentally defective samples, it seems indeed to be a fairly good group discriminator although the diagnostic efficacy of this sign may be too low for practical utility in an individual case. Here we have to very clearly differentiate between "clinical utility" on the one hand and "test validity" on the other hand. An instrument may be perfectly valid in terms of yielding a significant difference when the incidence of a sign or constellation of signs in one population differs significantly from its occurrence in another population. Still, the technique may not be useful for clinical purposes if the occurrence of the sign is sufficiently rare in either group or if the difference is not great enough to permit individual identifications to be made. This is especially true if more accurate predictions can be made simply on the basis of taking into account the base rate of the disorder in a given population.

Turning now from a review of the general research findings to my own clinical impressions, let me outline those uses of the Bender-Gestalt Test which I have found personally to be most helpful.

First, I feel the test should be administered whenever an organic abnormality of the brain is suspected. Not all patients with an organic brain injury will demonstrate abnormal patterns. While gross organic pathology will almost always be detected, certain types of organic dysfunctioning, especially those in which the abnormality is minor or more subtly expressed, or when there is present a diffuse cerebral involvement will not likely lead to discernible distortions on the Bender-Gestalt Test. What I am suggesting is that focal disabilities leading to difficulty in organizing spatial elements or problems with manual coordination often show up quite clearly. The most frequent and obvious Bender test manifestations of organic brain injury are rotations, persevera-

tions, difficulty in changing the direction of lines, uneven, broken lines, regressive features, such as loops instead of dots, and expressions of impotence. The Bender recall will also usually be quite poor, often with fewer than five whole or part designs being reproduced, when the overall intellectual functioning is average. Unlike the neurotic, who usually does relatively worse on the digit-span memory test than on Bender recall, the organic patient ordinarily does just as poorly on Bender recall as on the recall of digits. There is evidence, therefore, to suggest that the neurotic is relatively more disrupted by the interpersonal nature of the digit-span test and by being required to attend carefully to the presentation of numbers, than he is by the relatively impersonal nature of the Bender test situation where no advance warning of the need to recall is given. Conversely, the organic patient benefits relatively little by the less personal and less threatening aspects of the Bender-Gestalt memory situation.

Secondly, I would suggest the use of the Bender-Gestalt Test always when mental retardation is a differential diagnostic problem. In my experience I have found that this technique can be very helpful in differentiating between pseudo-retardation and genuine retardation. Even when the WAIS or the WISC fail to clarify this distinction, the Bender will frequently indicate quite clearly that the individual is capable of considerably higher mentation, arguing in favor of a diagnosis of pseudo-retardation as contrasted from a true retardation. Moreover, the low level of Gestalt perception and execution in genuine mental retardation is usually compatible with other, more detailed and time-consuming, procedures. Certainly, these observations and those of other clinicians would merit the general use of this test for screening purposes, especially with children.

The third purpose for which I would recommend the use of the Bender-Gestalt Test is to assess the amount of regression with psychotic subjects. In a very rough, imprecise sense, there appears to be an approximate relation between the general intactness of the designs and the intactness of the ego. Severely impaired ego

functioning is almost always associated with distortion and primitivization of the designs. When the Bender task is well executed in a known psychotic, the person is usually a well-defended psychotic in whom there is no serious dilapidation of the personality. Massive areas of the ego are able to continue functioning adequately, thus presenting a good prognostic picture.

Another area in which I feel the Bender-Gestalt Test holds much promise is in the assessment of the mode of affect expression. The degree of emotional reactivity and the amount of ego control exercised over the release of affect may often be gauged by such indicators as the amplitude of the curved portions of the designs, the size of the figures drawn, their spacing, and the line quality. For example, variations in size, when marked, may reflect vacillating emotional control, ranging from constriction to expansiveness. The sequence of the changes in size from the early designs to the later figures may yield significant clues about more general tendencies toward either an increasing or decreasing reliance on defenses as the person becomes more familiar with, or involved in, situations.

I also like to use the Bender to help determine how well the patient plans and organizes himself, which represents an essential part of judgment.

This leads to my last suggested clinical use of the Bender-Gestalt, namely, for identifying areas of interpersonal relationships that present particular difficulty. For example, patients who consistently draw designs in which contact points are avoided seem to have special difficulty in establishing intimate social relationships. On the other hand, if parts intrude upon one another, as when the diamond impinges on the circle in Design A, it is likely that an intrusively aggressive relationship is typical.

The Bender-Gestalt Test has in the past been used uncritically far too much and for too long a period of time. It behooves all of us not just to pay lip service to research and then to continue in our preferred ways without applying findings to our clinical work. Unless we take the research seriously and modify our clinical

inferential procedures accordingly, we will do a great disservice to our patients and to the evolving science of clinical psychology.

The Projective Drawings

In the brief time remaining permit me to outline some guidelines that have been helpful to me in increasing and refining the yield obtained from the projective drawing technique. I will first state the principle, follow this with a brief explanation, and then cite the basic assumption underlying the principle.

Principle 1—

Rely more on the global approach in the interpretation of drawings.

My feeling is that the usual stress placed on specific drawing features is in most instances unwarranted because, in general, the inferences based on discrete characteristics have very little validity (see, e.g. Swenson, 1957). I like to ask myself such questions as: How does the drawing as a whole impress me? Is it reasonably well-structured or bizarre? What kind of a person is likely to produce a drawing like this one?

The basic assumption is that isolated drawing features usually lack validity for the determination of personality dynamics.

Principle 2—

Stress and interpret the most apparent and gross deviations instead of analyzing a host of minor characteristics which other clinicians might not even agree are in evidence.

Interpretations are much more likely to be valid if they are based on unusual renditions of the human figure which can be reliably identified.

The assumption is that the significance of a drawing feature is roughly proportionate to the extent of its representation.

Principle 3—

Place greater weight on associations produced in response to the drawings and do not depend solely

on formal or structural characteristics.

Often the analysis of associations is the more fruitful approach, especially when there are no gross deviations present.

The assumption is that quite frequently the drawings serve as an excellent vehicle for the less inhibited expression of verbal material of significance.

Principle 4—

Establish the consistency over time of major drawing deviations from which interpretations are made.

For a feature to relate to relatively enduring personality characteristics it must be a reliable feature.

The assumption here is that situational factors can exert great influence on all types of performance, and must be taken into account.

Principle 5—

In proposing interpretive hypotheses, limit yourself to those personality variables that have generally agreed upon and sharply defined meaning.

Too often clinicians make vague, all-encompassing references to a multitude of terms that seem impressive but which are not clearly or operationally definable. Also, the concepts specified should have meaningful implications for therapy or other decision-making.

We assume that reports can be made more useful by avoiding the errors of vagueness, overinclusion, and reliance on jargon.

Principle 6—

Enlist the patient's assistance in establishing interpretive hypotheses.

The mode used by a patient to reconcile disparate performance, to rationalize behavior, and to gain insight represents important data for interpretation.

The assumption inherent in this proposal is that interpretations can be more accurate if based on a co-operative effort between examiner and examinee, not only in the elicitation of test responses but also in their evaluation.

tation of test responses but also in their evaluation.

Principle 7—

Try to comprehend the patient's general orientation, approach to problems, or coping style (ego functions) instead of embarking on a search for specific drives.

These ego functions may, of course, embrace derivatives of drives, the defenses employed to deal with them, and the compromise solutions attained. Should it become necessary to deal with drives in formulating interpretive hypotheses, much more than their general delineation is required. The examiner must attempt to specify the conditions for their elicitation, their relative strengths, and their directionality.

Detecting drives, which are presumably universal, it is assumed, contributes very little to the understanding of the individual's uniqueness.

Principle 8—

Attempt to identify the specific figures in the patient's life onto whom feelings are projected.

One of the most vexing and recurrent problems in drawing interpretation deals with the question: Whom is the patient depicting or associating to in his drawings? Is it himself or his spouse or some other significant figure in his life? Only further questioning and careful checking against other material will clarify the matter.

While we subscribe to the belief that there is always an element of self-portrayal involved in patients' projections, we assume that in some instances the exact perceptions of *specific* figures in life represent far more important findings than the knowledge that the patient himself is motivated by unacceptable impulses.

Finally, I would like to inject a cautionary note. Do not expect any one projective test, or even combination of tests, to answer too many questions about any

particular patient. This is especially true if we focus on the most noteworthy test features that seem to have the greatest degree of validity. Then we must content ourselves with specifying limited dynamics pertaining to the areas most relative to the features involved.

REFERENCES

- Billingslea, F. Y. The Bender-Gestalt: An objective scoring method and validating data. *Journal of Clinical Psychology*, 1948, 4, 1-27.
- Hutt, M. L. & Briskin, G. J. *The clinical use of the revised Bender-Gestalt Test*. New York: Grune & Stratton, 1960.
- Kopitz, E. M. The Bender-Gestalt Test for children: A normative study. *Journal of Clinical Psychology*, 1960, 16, 432-435.
- Pascal, G. R. & Suttell, B. J. *The Bender-Gestalt Test: Its quantification and validity for adults*. New York: Grune & Stratton, 1951.
- Schulberg, H. C. & Tolor, A. The "meaning" of the Bender-Gestalt Test designs to psychiatric patients. *Journal of Projective Techniques*, 1962, 26, 455-461.
- Sundberg, N. D. The practice of psychological testing in clinical services in the United States. *American Psychologist*, 1961, 16, 79-83.
- Swenson, C. H. Empirical evaluations of human figure drawings. *Psychological Bulletin*, 1957, 54, 431-466.
- Tolor, A. The "meaning" of the Bender-Gestalt Test designs: A study in the use of the semantic differential. *Journal of Projective Techniques*, 1960, 24, 433-438.
- Tolor, A. & Schulberg, H. C. *An evaluation of the Bender-Gestalt Test*. Springfield, Ill.: Charles C Thomas, 1963.

Discussion for Current Status of Some Projective Techniques

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In assessing the current status of projective techniques, we should distinguish the use of the projective instrument as a technique or method from its use as a test. As a *technique* it is an aid in arriving at information regarding the test-taker and its keynote is its flexibility. The examiner may utilize all or portions of the technique and he may jot down all kinds of clinical impressions. Used as a technique its value is difficult to assess objectively. One reason for this difficulty is that the criteria of "value" vary from one researcher to another and the technique may serve well for some criteria but not for others. Thus, the technique may be used for diagnosis, prognosis, measuring change over time, and evaluating the outcome of treatment. Further, the validity of criteria may vary from subject to subject.

Research as well as common observation has indicated that it makes a big difference who administers the test. There is really no such thing as technique validity — only technique-tester validity. It is of considerable importance whether the Bender-Gestalt, for example, is analyzed by Alexander Tolor or Max Hutt, as opposed to John Doakes. The instrument by itself has neuter validity. It is just a series of blots or pictures, sentence stems or drawings having no utility until the examiner gives it life.

When we consider projective techniques as *tests*, we cause some of our projective forefathers to experience a dyspeptic moment or two because the original *cause celebre* of projective techniques was to free psychology from its preoccupation with numbers and have it instead embrace the whole individual. Nomotheticists, or individuals concerned with quantitative measurement, had left the individual no place to sit but on his continuum — but projective technique adherents attempted to restore the concept of the unity of the individual. Yet, like it or not, the newer more research-oriented clinical psycholo-

gist has attempted to justify the continued use of the instrument by treating it as a test.

Procedures have been standardized, scoring has been defined, and lengthy manuals issued to further reliability. Elsewhere (Murstein 1963), much has been written concerning the problems in such a step so that it is unnecessary to enumerate them here in detail. Let me say, briefly, therefore, that in addition to the standard problems of reliability that a test such as the MMPI faces, projective techniques add new ones. One of these is getting two different scorers to agree when a perceptual score which they are evaluating is based in part on an inference from verbal statements. Interscorer reliability is, of course, no problem for the MMPI where the subject answers "yes" or "no". Second, the Rorschach or TAT test-retest reliability may suffer because the subject looking at a card may focus on one aspect of the stimulus at one time and another part of the same card on another occasion without the change in focus being necessarily due to a clearly understood aspect of his personality. Moreover, projective techniques often present a creative challenge to the subject. Thus, if a subject tells a story with an achievement theme on one card, he is apt *not* to tell a story with an achievement theme on the next card for no other reason than for the sake of variety.

The result of these factors is that they contribute to excessive score variability. Thus, even in a relatively reliable scoring system such as the McClelland *n-Ach*, the size of the standard deviation often exceeds the mean. This fact makes it difficult to obtain significant differences between small experimental groups even when mean differences are large. The researcher interested in *group* differentiation can often overcome this problem by employing large *N*'s and thereby compensating for the variability of scores. For the

clinician attempting to predict to the individual case, however, it is most hazardous to predict achievement motivation on the basis of an *n-Ach* score. The proposal of Professor Dana (1967) to systematically investigate the contribution of stimulus, sex, administration, interaction of needs, and arousal condition, therefore, is a step in the right direction in harnessing these multiple influences on the projective response. Until such time as these influences can be systematically examined, Professor Tolor's advice (1967) to avoid the pitfalls of unreliable, rare, and esoteric signs is well taken. Global assessments have the virtue of utilizing a multiplicity of signs so that while any one of the given components may have marginal reliability, the overall assessment usually achieves respectable reliability and sometimes moderate validity. The price paid for this gain is that the clinician must sacrifice the ego-enriching but dangerous game of making exceedingly specific statements like that made by Theodore Reik. He learned from a female client that she had been to the dentist, received an injection and had a wisdom tooth pulled, which, however, still ached. After a few moments she pointed to a book in the bookcase which she said was standing on its head. In Reik's (1948, p. 263) own words, from his book *Listening with the Third Ear*, "without the slightest hesitation and in a reproachful voice I said, 'But why did you not tell me that you had had an abortion?'" Here indeed is symbol validation *par excellence* which, however, individuals with less than three ears could scarcely hope to match.

Another problem is the determination of the behavioral correlates of significant signs on projective tests. We may find, for example, that a hostility score on the Rorschach differentiates psychopaths from normals. Does this mean that psychopaths are more hostile than normals? Not necessarily, for it is not sufficient to stop at this point as many have done and assume that a high hostile score on a projective technique automatically ensures that psychopaths are the more hostile group. Rather, it is incumbent to demonstrate that the hostility score itself is a function of hostile behavior. But what

kinds of hostile behavior? Physical aggression? Verbal aggression? Passive resistance? Susceptibility to prejudice?

The future will undoubtedly result in the breaking down and subdivision of gross categorizations such as "hostility" which are rarely specific enough for useful prediction. Fortunately, we are already beginning to see improvement in this respect in current research. Fewer individuals are counting up *M's* on the Rorschach and speaking of "inner-directed activity". It does make a difference whether the *M* is of good form level and whether the percept is of a broad-jumper in the air straining to reach the 27 foot level, or of a tired man slumping down upon a tree stump.

Further, the work of Murstein and Wiens (1963) and Megargee and Cook (1967), to name just two studies, has indicated via factor analyses that questionnaire hostility, TAT hostility, and Rorschach hostility represent three or more independent dimensions of hostility. The question for future research is, what are the behavioral correlates of these scores?

We have long known that the ego defenses must be taken into account in interpreting protocols. Research is beginning to indicate, however, that there are at least two kinds of subjects: "revealers" and "concealers". "Revealers" have nothing to hide. Give them a questionnaire and they project their views of life and their needs quite readily. Give them a projective technique and they project themselves without difficulty. Sometimes, they can't even wait for the first card to be unveiled but start telling you all about their problems and/or view of life before you have your pencil and paper ready. This type is found most readily in volunteer college populations. The more arduous the task and the smaller the monetary compensation for participating, the heavier the representation of "revealers".

The "concealers", on the other hand, have less to say about themselves than the proverbial "silent Cal Coolidge". Thus, administering a questionnaire to such individuals is often of limited value. Here, projective techniques or tests, if their scoring systems are sufficiently sophisticated, may well prove a valuable aid.

Particular examples of these types may be found in the work of Zimbardo (1964) who found that subjects reporting themselves as reticent in expressing their feelings of pain showed greater fear arousal on a projective measure than they did on a questionnaire, but the opposite was true for individuals who tended to express their pain to others. Murstein's findings (1968) that hostile college subjects with hostile self-concepts showed some tendency to manifest more hostility on both the Rorschach (1956) and TAT (1965, 1968) than hostile subjects with friendly self-concepts might suggest that he worked with a high proportion of "revealers". Sherwood's work (1966) indicated that men and women may switch from being "revealers" to "concealers" as a function of the relevance of the particular need to the stereotyped sex role. He found that, for need-affiliation (*n-Aff*), a projective measure was a better predictor than self-report for men but an opposite tendency existed for women. Men who perceived themselves as "revealers" showed a significant correlation between *n-Aff* and actual affiliative behavior. "Concealing" men showed a non-significant correlation. It would seem that this is a vital area for future research.

The "revealer-concealer" concept may also account for the disparity that Goldberg (1967) reports between the proven research capability of the sentence completion method (SCT) and its relatively humble place in clinical armamentarium. The method may be thought to be of limited utility by some because it seems so susceptible to conscious control. Yet, this susceptibility may be the reason for its success in research. Many studies have shown an unusually high correlation between maladjustment on the SCT and emotional maladjustment as evidenced by consulting the college counselor. Both of these variables, however, may be *prima facie* evidence of "revealist" tendencies. The person willing to say that he has problems on the SCT is not hesitant to come to the college counselor to relate his troubles when the burden of his problems is difficult to bear alone.

One of the most crucial problems facing projective tests that has so far been largely skirted is the issue of whether projective tests are worthwhile in terms of information gained per investment of time. It is true that computerized techniques may cut down on the time formerly consumed in lengthy analysis. The question, nevertheless, may only be answered by comparing the information gained via projective tests with other simpler methods like self-report questionnaires and case histories. My hunch is that tests will fare poorly in this respect for "revealers" and do quite well for "concealers". This again points to the need for attention to the response set of the subject in deciding whether to use the tests rather than the customary approach of routinely administering the projective battery. Of course, in some cases projective tests will be useful even with "revealers"; particularly so for those cases where the "revealer", is himself unaware of important personality characteristics of interest to the examiner.

Last, there is currently little need for research on specific elements or sub-scores of projective tests as typified by *M*, *W*, and the like on the Rorschach and various content scores on the TAT. What is more desirable are comprehensive, theoretical-review analyses which interpret and integrate the babel tower of research rather than add to it.

What then of future prospects for projective techniques? As an examiner-technique-instrument for clinic-interpretation, it still seems viable though its efficacy will vary with the skill of the examiner. As a research instrument it is solidly entrenched, particularly as a measure of aroused drive states.

The main question at this point, therefore, is whether it will survive as a test for clinical assessment. The situation is more optimistic today than it was ten years ago. Computers will simplify scoring. Researchers like Holtzman, Thorpe, Swartz, and Herron (1961) have applied accepted test theory concepts to the ink blot technique and made it into a fairly reliable test, though for reasons adumbrated earlier, it will probably never equal

the reliability of the better paper and pencil techniques. If it exceeds them in validity, however, this fact will not matter greatly.

There are, however, difficulties which have proved refractory to concentrated research attack. One of these is the fact that though the Rorschach is basically an instrument of perception it is analyzed by means of the verbal interaction between examiner and subject. Is anything lost in this process as compared to a more perceptually-oriented instrument such as the Baughman-Rorschach modification (Baughman, 1958)? I know of no direct comparison between these tests at this time, but it should be an interesting research project for the future. Even more thorny is the perennial problem of validating the projective hypothesis that projective responses are indicative of basic personality processes and the development of a comprehensive theory of ego functioning as it affects the projective response. It is, after all, possible that we may build more and more reliable tests which yet do not increase in validity for want of adequate theory.

Earlier ambitious studies such as the Michigan Assessment Project of VA graduate students (Kelley and Fiske, 1951) resulted in negative results regarding projective techniques. The studies, however, were, with the hindsight of history, rather naive and unsophisticated in their use of projective instruments, not to mention choice of criteria for "successful" psychologists. Consequently, they can not be considered very damning for an appraisal of projective tests. Now that projective tests have been assimilated into the agglomeration of instruments amenable to conventional test construction, however, this "escape clause" is no longer available. When our knowledge of personality theory and its subdivision, projective test theory, has advanced even further beyond such constructs as the "revealer-concealer" approach, we shall be ready for the "moment of truth" for the projective test as a measure of personality and clinical assessment.

REFERENCES

- Baughman, E. E. A new method of Rorschach inquiry. *Journal of Projective Techniques*, 1958, 22, 381-389.
- Dana, R. H. Thematic technique and clinical practice. In B. I. Murstein (Chm.), Current status of some projective techniques. Symposium presented at the American Psychological Association, Washington, D. C., 1967.
- Goldberg, P. A. The current status of sentence completion methods. In B. I. Murstein (Chm.), Current status of some projective techniques. Symposium presented at the American Psychological Association, Washington, D. C., 1967.
- Holtzman, W. H.; Thorpe, J. S.; Swartz, J. D.; and Herron, E. W. *Inkblot perception and personality*. Austin: University of Texas Press, 1961.
- Kelley, E. L. & Fiske, D. W. *The prediction of performance in clinical psychology*. Ann Arbor: University of Michigan Press, 1951.
- Megargee, E. I. & Cook, P. E. The relation of TAT and inkblot aggressive content scales with each other and with criteria of overt aggressiveness in juvenile delinquents. *Journal of Projective Techniques & Personality Assessment*, 1967, 31, (1), 48-60.
- Murstein, B. I. The projection of hostility on the Rorschach and as a result of ego-threat. *Journal of Projective Techniques*, 1956, 20, 418-428.
- Murstein, B. I. *Theory and research in projective techniques: emphasizing the TAT*. New York: John Wiley, 1963.
- Murstein, B. I. Projection of hostility on the TAT as a function of stimulus, background, and personality variables. *Journal of Consulting Psychology*, 1965, 29, 43-48.
- Murstein, B. I. The effect of stimulus, background, personality, and scoring system on the manifestation of hostility on the TAT. *Journal of Consulting Psychology*, 1968 (in press).
- Murstein, B. I. and Wiens, A. N. A factor analysis of various hostility measures on a psychiatric population. *Journal of Projective Techniques & Personality Assessment*, 1963, 27, 447-451.
- Reik, T. *Listening with the Third Ear*. New York: Farrar, Straus, 1948.
- Sherwood, J. J. Self-report and projective measures of achievement and affiliation. *Journal of Consulting Psychology*, 1966, 30, 329-337.
- Tolor, A. The graphomotor techniques. In B. I. Murstein (Chm.), Current status of some projective techniques. Symposium presented at the American Psychological Association, Washington, D. C., 1967.
- Zimbardo, P. Relationship between projective and direct measure of fear arousal. *Journal of Abnormal & Social Psychology*, 1964, 68, 196-199.

Artists Versus Nonartists: Rorschach Determinants and Artistic Creativity

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Summary: A clear differentiation between artists and nonartists was found in both formal quantitative and informal qualitative analyses. The results of the present study lend statistical support to the discriminatory power of the Rorschach in identifying artistic creativity. Artists and nonartists were carefully matched as to sex, age, verbal intelligence and education. The Rorschach Group Method was utilized to compare the two groups on all formal scoring categories of both the Klopfer and Beck systems. In addition to formal scoring, possible discriminating aspects in the verbalization of responses were analyzed qualitatively.

Some 40 years ago Herman Rorschach (1942) proposed several ink blot response variables as possible indicators of artistic creativity. At that time he stated that among nonpsychotic persons, creative individuals should give a maximal number of organized whole responses, human movement responses, original responses and good form responses, but a minimal number of animal responses. Similarly, Piotrowski (1943) stated that creative capacity was represented by good human movement responses and easy production of a type of whole response in which there was meaningful integration of details.

In reviewing the work of subsequent researchers, it becomes apparent that the ink blot response variables initially proposed have failed to reliably identify creative individuals (Prados, 1944; Roe, 1946a, 1946b, 1946c; Steiner, 1947; Anderson and Munroe, 1948; Rust, 1948; Zubin, 1954; Griffin, 1958; Richter and Winter, 1966). Almost all of the studies reviewed indicated that creative individuals respond with average form level, average animal content, and, more often than not, fall within the normal range of original responses.

Whole response production has probably held up more consistently than any other ink blot variable as characteristic of the creative individual (Harrower and Cox, 1943; Prados, 1944; Roe, 1946a, 1946b, 1946c; Steiner, 1947; Richter and Winter, 1966; Rawls and Boone, 1967). On the other hand, movement response production has met with the greatest amount of contradictory results, with about as many researchers finding it

to be characteristic of artists (Harrower and Cox, 1943; Prados, 1944; Steiner, 1947; Anderson and Munroe, 1948; Richter and Winter, 1966) as not finding it (Roe, 1946a, 1946b, 1946c; Rust, 1948; Zubin, 1954; Griffin, 1958).

At least some of the discrepancies in the aforementioned findings could be a direct result of one or a combination of the following: use of different scoring systems (Klopfer, Beck, etc.), different instruments (Rorschach, Holtzman, and Levy Movement Blots), different subject populations (artists, art students, and individuals selected by creativity tests or talent test scores, etc.), different methods of administration (group method versus individuals testing), and/or different norms (published norms, scorer's own personal norms or comparison of criterion groups).

The present study was designed to clarify some of the aforementioned inconsistencies by comparing the two major scoring systems and by using more stringent controls. The artist subjects in the study had established reputations in the creative arts and were productive in painting and/or sculpture. Artist and nonartist subjects were carefully matched with regard to age, sex, education and verbal intelligence. The Rorschach Group Method was utilized to minimize examiner influences. Two psychologists independently scored the protocols without knowing which were artists' and which were nonartists'. For purposes of comparison, both the Klopfer and Beck scoring systems were utilized. Finally, the findings were subjected to statistical analysis. In addition to formal scoring, the

data were analyzed qualitatively.

Method

Subjects

Subjects were 12 artists (7 males and 5 females) and 12 nonartists (7 males and 5 females). The artist subjects were volunteers from among those engaged in applied fine arts instruction at either the Memphis Art Academy or Memphis State University. All artists had been productive to some degree in painting and/or sculpture. Nonartists, most of whom were teachers in the Memphis-Shelby County School System, were selected from students enrolled in one of four graduate-undergraduate education courses at Memphis State University. Individuals were successively eliminated from this group until there remained only those who fell within the artists' range of age, years of education, and Thorndike-Gallup Vocabulary scores. Seven males and five females were then randomly selected from this remaining group to serve as nonartist subjects. Upon completion of subject selection, *t* tests showed no significant differences between artists and nonartists in age, verbal intelligence (as estimated by the Thorndike-Gallup) and education (see Table 1). None of the subjects had had previous experience with the Rorschach.

Procedure

Cards were administered to subjects by means of the Rorschach Group Method. An opaque projector was used to project each plate in the upright position on a beaded glass screen for a duration of five minutes.

Protocols were scored independently by two psychologists possessing clinical experience with the Rorschach. Since

protocols were identified only by number, the scorers were unaware of the group from which they came. For purposes of comparison, each psychologist used both the Klopfer and the Beck scoring systems. Differences in scoring were largely resolved through discussion. Scored responses in each category were then averaged for each subject. In addition to formal scoring, the psychologists were asked to make note of (1) unusual or meaningful features of each protocol, and (2) possible discriminating aspects in the verbalization of responses.

Results

The data were analyzed both quantitatively and qualitatively. Quantitative response variables were analyzed separately for the two scoring systems (see Table 2). When scored by the Klopfer system, the following response variables significantly discriminated artists from nonartists: *W* or whole responses ($p < .001$); W or cut-off wholes ($p < .05$); ΣW or the sum of all whole responses ($p < .001$); $W\%$ or the percentage of whole to total responses ($p < .01$); *d* or small detail ($p < .02$); *FC* or form-predominant color ($p < .01$); *M* or human movement ($p < .01$); ΣM or the sum of all movement responses ($p < .02$); and $M\%$ or the percentage of human movement to total responses ($p < .01$). With the exception of small detail, artists gave the greater number or percentage of responses in each case. Response variables differentiating the two groups when scored by the Beck system were: *W* or whole responses ($p < .001$); $W\%$ or the percentage of whole to total responses ($p < .01$); *Zf* or organization ($p < .01$); *M* or human movement ($p < .01$); and $M\%$ or the percentage of human movement to total responses ($p < .01$). Significantly discriminating content categories of both scoring

Table 1
Description of Subjects

Group	Males	Females	Mean I.Q.	Mean Age	Mean Years College
Nonartist	7	5	126.25	38.4	5.2
Artist	7	5	124.75	37.6	5.2

Table 2
Formal Scoring Categories
Significantly Differentiating Artists from Nonartists

	Artists		Nonartists		
	Mean R	R Range	Mean R	R Range	<i>p</i>
KLOPFER					
W	10.58	6 to 23	4.50	1 to 9	.001
W	2.42	0 to 4	1.25	0 to 2	.05
ΣW	13.00	6 to 25	5.75	1 to 11	.001
W%	31.50	16 to 77	13.92	3 to 38	.01
d	2.50	0 to 7	5.17	1 to 11	.02
FC	2.08	0 to 4	.42	0 to 2	.01
M	6.58	2 to 17	1.67	0 to 4	.01
ΣM	13.42	5 to 26	5.33	1 to 13	.02
M%	33.42	15 to 50	14.75	3 to 29	.01
BECK					
W	11.70	6 to 23	4.33	1 to 10	* .001
W%	25.67	12 to 33	10.42	3 to 29	.01
M	6.85	2 to 19	1.85	0 to 4	.01
M%	16.42	2 to 37	4.33	0 to 12	.01
Zf	16.75	9 to 29	7.92	1 to 15	.01
FC	2.03	0 to 4	.45	1 to 2	.01
CONTENT					
H	7.92	4 to 19	2.92	1 to 13	.01
Ad	2.00	0 to 7	5.17	1 to 10	.05
Sex	2.17	1 to 12	.08	0 to 1	.05
Abstract	2.08	0 to 11	.08	0 to 1	.05

systems were: *H* or human content ($p < .01$); *Ad* or animal detail ($p < .05$); Sex ($p < .05$); and Abstract ($p < .05$). Artists showed the greater number of responses in each case but animal detail.

From the subjective impressions of the two psychologists, qualitative differences between artists and nonartists were examined informally. One of the more striking differences seemed to be in the degree of verbal elaboration given a response. For instance, whereas a nonartist might have given the response "angels," an artist would more likely have responded with "two fat angels clinging tightly to a bell," or "a Romanesque angel," etc.

Artists also showed a greater tendency to refer to specific periods of history, geographical areas, notable works of art, and reknowned persons. This was ex-

emplified by such descriptive phrases as "ancient Egyptian," "medieval," "early Chinese jade ceremonial spearhead," "as Brueghel might do it," etc.

Artists also seemed to become more deeply involved in and identified with their response productions. Their emotional involvement was demonstrated in such remarks as "this disturbs me," "this has a whimsical quality," "this is a friendly form," etc. Nonartists, on the other hand, generally gave little personal, idiosyncratic material.

Finally, artists' protocols were almost invariably more difficult to score. One reason for this was that a single response often included multiple features, for example, "two dogs walking from hot sand into H_2O ," "a beating heart butterfly," etc. Occasionally some of the con-

glomerate percepts of artists bordered on pathognomonic contamination: "the iron mask without the man, bloody at the neck," and "a marvelous dwarf-like man, riding a bodyless horse... their bones appear like an x-ray."

Discussion

Analyzing the quantitative results, discriminating variables appeared to fall into two convenient categories: perceptual organization (variables related to *W*), and productive richness (variables related to *M*). Artists responded with a greater number of *W*, *W*, and *Zf* and a lower number of *d* and *Ad*. This could be interpreted in a variety of ways. Artists might be said to exhibit (1) a greater capacity for perceptual organization (perhaps due in part to their familiarity with visual tasks), (2) greater intellectual flexibility and synthesis, (3) more task involvement (possibly attributable to interest in situations resembling art appreciation) and/or greater ease in ambiguous situations.

In the second grouping of variables, artists' responses indicated a much richer, more productive imagination, as seen in *M*, *H*, *Sex*, and *Abstract* categories. Artists' greater use of movement and human content might also prompt interpretations along the lines of (1) greater introspective sensitivity, (2) capacity for empathy, (3) tolerance for change, or even as (4) obsessive thinking. The greater use of abstract and sexual content gives further evidence of artists' willingness to express ideas beyond the everyday material world and conventionality.

Artists' greater use of *FC* seems consistent with their experience in effectively integrating form and color in their art productions. However, as it is standardly interpreted, that is, as evidence of emotional maturity, *FC* could account for artists' greater tolerance of ambiguity and their unfettered expression of seemingly "loose" associational content.

The qualitative data support the quantitative findings and are substantially in line with the studies and reviews by Barron (1955), Guilford (1950), Eiduson (1958), MacKinnon (1965) and others. Although a variety of techniques

were utilized, artists were consistently found to be high in verbal and ideational fluency, associative richness, flexibility and preference for complexity, the unusual and the abstract.

Overall, the combined quantitative and qualitative data seem to point to three general factors which characterize the creative artist: productive imagination, perceptual organization and task orientation. From these three factors, one can draw a "portrait of the artist": his associations flow freely, he can combine them meaningfully, and he thoroughly enjoys the process.

REFERENCES

- Anderson, Irmgard & Munroe, Ruth. Personality factors in student concentration on creative painting and commercial art. *Rorschach Research Exchange*, 1948, 12, 141-154.
- Barron, F. Disposition toward originality. *Journal of Abnormal Psychology*, 1955, 51, 478-485.
- Beck, S. J., Beck, A. G., Levitt, E. E., & Mollish, H. E. *Rorschach's test*. Vol. 2. New York: Grune & Stratton, 1961.
- Eiduson, Bernice T. Artist and nonartist: A comparative study. *Journal of Personality*, 1958, 26, 13-28.
- Griffin, Dorothy P. Movement responses and creativity. *Journal of Consulting Psychology*, 1958, 22, 134-136.
- Guilford, J. P. Creativity. *American Psychologist*, 1950, 5, 444-454.
- Harrower, G. J. & Cox, K. J. The results obtained from a number of occupational groupings on the professional level with the Rorschach Group Method. *Bulletin of the Canadian Psychological Association*, 1943, 2, 31-33.
- Klopfer, B., Ainsworth, Mary D., Klopfer, W. G., & Holt, R. R. *Developments in the Rorschach technique*. Vol. 1. New York: World Book Co., 1954.
- Kris, E. *Psychoanalytic explorations in art*. New York: International University Press, 1952.
- MacKinnon, D. W. Personality and the realization of creative potential. *American Psychologist*, 1965, 20, 273-281.
- Piotrowski, Z. A. Use of the Rorschach in vocational selection. *Journal of Consulting Psychology*, 1943, 7, 97-102.
- Prados, M. Rorschach studies on artists-painters. *Rorschach Research Exchange*, 1944, 8, 178-183.
- Rawls, J. R. & Boone, J. Artistic creativity and Rorschach whole responses. *Journal of Projective Techniques & Personality Assessment*, 1967, 31, 18-22.

- Richter, R. H. & Winter, W. D. Holtzman ink-blot correlates of creative potential. *Journal of Projective Techniques & Personality Assessment*, 1966, 30, 62-67.
- Roe, Anne. Artists and their work. *Journal of Personality*, 1946, 15, 1-40. (a)
- Roe, Anne. Painting and personality. *Rorschach Research Exchange*, 1946, 10, 86-100. (b)
- Roe, Anne. The personality of artists. *Educational & Psychological Measurement*, 1946, 6, 401-408. (c)
- Rorschach, H. *Psychodiagnostics*. (Translated by P. Lemkau and B. Kronenberg) New York: Grune & Stratton, 1942.
- Rust, R. M. Some correlates of the movement response. *Journal of Personality*, 1948, 4, 369-401.
- Steiner, Matilda E. The use of the Rorschach method in industry. *Rorschach Research Exchange*, 1947, 11, 46-52.
- Zubin, J. Failures of the Rorschach technique. *Journal of Projective Techniques*, 1954, 18, 303-315.
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Stimulus Value of Rorschach Inkblots and Percepts as Perceived by Children and Schizophrenics¹

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Summary: 40 female grade-school students and 40 female schizophrenic patients rated the Rorschach inkblots and their percepts given as responses to the inkblots on 21 Semantic Differential scales. The directional trends for both blots and percepts were analyzed using the Chi-Square technique. Comparisons were made between these groups and previously studied female college students for both cards and percepts. Specific differences were found between the schizophrenic group and the other two groups. These differences were most pronounced in the positively evaluated connotations ascribed to cards and percepts by schizophrenics, and in the relative decrease in the number of consistent scale ratings. Possible reasons for the results were discussed.

Since the late 1950's several investigators (Little, 1959; Rabin, 1959; Zax & Loisel, 1960a; Zax & Benham, 1961) have adapted the Semantic Differential (Osgood, Suci, & Tannenbaum, 1957) to assess the connotative meaning of Rorschach inkblots. These studies demonstrated that the inkblots convey specific and consistent impressions to Ss, and that these impressions differ somewhat as a function of card order, age, sex, and diagnostic classification. Another study has shown that the connotative meanings ascribed to the inkblots are highly similar to those ascribed to the percepts given in response to the blots (Loiselle & Kleinschmidt, 1963). All of these studies suggest that further systematic investigations be carried out in order to more fully understand the relationship between inkblot and percept as influenced by age, sex, and clinical classification.

The purpose of the present study is to examine the relationship between the reported stimulus characteristics of the Rorschach inkblots and the characteristics ascribed to their percepts as perceived by grade school children and a group of patients clinically diagnosed as schizophrenic. The connotative meanings ascribed to both blots and percepts by

these groups will be compared to a normal college group from another study (Loiselle and Kleinschmidt, 1963).

Method

The Ss for this study consisted of three groups. The grade school group (Group G) were 40 female fifth and sixth grade students from a suburban school system representing all socio-economic levels. None of the children had ever taken the Rorschach or seen the blots prior to the experiment. Their mean chronological age was 10.27 with a range of from 9 years 8 months to 12 years 7 months; their mean I.Q. (based on school records) was 109.9 with a range of from 84 to 139.

The group of schizophrenic patients (Group S) consisted of 40 female inpatients from a state hospital and university psychiatric hospital. All of these Ss were diagnosed schizophrenic by at least two members of the hospital's staff, no diagnoses other than schizophrenia being considered. The patients' ages ranged from 17 years 7 months to 49 years 6 months with a mean age of 37.4. The normal college control group (Group C) consisted of two groups of 40 female undergraduate students. The mean age of Group C was 19.33 with a range from 17 years 10 months to 21 years 6 months. Although this group does not represent the normal population it falls between Group G and Group S with regards to age, and no member of this group had any known psychiatric problem. The group is defined somewhat more fully in another study (Loiselle & Kleinschmidt, 1963).

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The Semantic Differential used consisted of seven scales for each of the three factors. These 21 scales are listed in Table 1 and their arrangement is described elsewhere (Zax & Loisel, 1960a; Zax & Loisel, 1960b; Zax, Loisel & Karras, 1960; Loisel and Kleinschmidt, 1963). Ss were given booklets containing the scales and a modification of the Semantic Differential instructions (Osgood, *et al*, 1957). The instructions were read aloud and the Ss were given an opportunity to ask questions. The Rorschach inkblots were either presented directly, using the standard cards, or projected from 2x2 *Ektachrome Transparencies*, depending on the number of Ss being tested. This variation in method of presentation has been shown to have no significant influence, since Rabin (1959) who projected the inkblots obtained the same results using the Semantic Differential as Zax and Loisel (1960a) who used the cards directly. Sufficient time was allowed for every S to complete the 21 ratings on each inkblot.

After the Ss had rated every inkblot the completed booklets were collected and new sets of booklets given to each S. The Ss were again shown the inkblots and instructed to write down a response to each blot. These perceptions were placed at the top of the pages containing the 21 scales, one per page. Each S then rated her own perceptions in the same way as they had previously rated the inkblots.

Results

The ratings for each card and percept on each of the 21 scales were tabulated and an analysis of directional trends was made. The ratings of I, II and III were combined as were ratings of V, VI and VII. Ratings of IV which represented either neutrality or the inapplicability of the scale were not directly employed in the analysis. If a significant number of IV ratings was made on a particular scale, no further analysis was carried out since this implied that a substantial number of Ss were unable to discriminate for that particular scale. It was determined that 11 or more IV ratings out of 40 represented a significant deviation (5% level)

from what was expected by chance. Analysis was limited to those scales with fewer than 11 neutral ratings. The chi-square technique was applied to the remaining scales. The results of this analysis for Groups G and S and for both blots and perceptions showing significant directional trends ($p < .05$) for each scale are summarized in Tables 1 and 2.

The results in Tables 1 and 2 show that for Group G significant differences, reflecting consistent connotative meanings, were found for 96 of the scales measuring the inkblots and 67 of the scales measuring the perceptions. For Group S only 51 of the scales measuring the inkblots and 52 of the scales measuring the perceptions showed significant consistent connotations. Group G had 46 scales which reflected the same connotation for both cards and perceptions, while Group S had only 21 scales showing consistent connotative trends for cards and perceptions.

Table 3 indicates that the number of significant chi-squares for inkblots and perceptions is considerably less for Group S than for either Group G or Group C. Table 4 shows that although there are no differences between Groups G and C regarding the number of scales having significant directional trends for cards and perceptions, as well as the number of scales where cards and perceptions showed similar trends, Group S has fewer significant trends than either of the other groups. Similar findings were found previously for cards alone (Zax, Loisel, & Karras, 1960).

There are other marked differences among the rating patterns of Groups S, C, and G. To investigate the possibility that other differences in rating patterns exist among the three groups, the groups were compared to one another with regard to ratings above and below four (neutral rating). The chi-square technique was applied to the 630 comparisons among groups for both cards and perceptions (21 ratings for each of the 10 cards and perceptions for the three groups). Those scales yielding significant differences at the 5% level between groups are shown in Tables 5 and 6.

The number of scales yielding signifi-

Table 1
Comparison of Scales Yielding Significant Chi-Squares
for Group G

	I	II	III	IV	V	VI	VII	VIII	IX	X
Beautiful-ugly	c p	c	c p	c p		c	C	C		C
clean-dirty	c p	c p		c p	c					CP
fair-unfair	c P		P	c			CP	P		C
good-bad				c p	P	c	CP			CP
happy-sad	c	P		c p	P		CP			C
kind-cruel	c	P		c p	C		CP	p		C
wise-foolish	c	c	c	c p		c p				
brave-cowardly	CP		CP	CP	P	P		P	CP	
hard-soft			c	CP	c	c	c			c
heavy-light	c	P	c	CP	c p		c			c
large-small	CP	P	P	CP	c p	C		P	C	C
masculine-feminine	CP			CP			c	p	C	C
rough-smooth	C			CP				P	P	
strong-weak	C	P		CP	p	P			P	
active-passive	c P		CP		CP		CP	P		CP
angular-rounded	CP		C	c	C	C		c		C
fast-slow	c P		CP		CP				P	
hot-cold	c			c	c P	c p	P	p	CP	c p
reckless-cautious	CP	C		CP					Cp	
sharp-dull			CP					c		
tense-relaxed	C			CP			c			c

NOTE: "c" denotes that a significant number of the ratings were toward the right side of the continuum for the cards; "p" denotes the same thing for the percepts.

"C" denotes that a significant number of the ratings were toward the left side of the continuum for the cards. "P" denotes the same thing for the percepts.

cant chi-squares for each of the three comparisons are greater than what would be expected by chance. The largest number of differences between Groups C and G were in the activity and potency factors, with Group G tending to view the cards as more active and more potent than Group C. Superficial inspection of Tables 5 and 6 suggests that this is par-

ticularly the case for Cards I, II, and IX. In general Group S tended to view Cards I and IV more positively than did either of the other two groups. Group S also tended to perceive Card I as slightly more active than Groups C and G, while conversely these groups viewed Card VIII as more active than did Group S.

With regard to the connotative mean-

Table 2
Comparison of Scales Yielding Significant Chi-Squares
for Group S

	I	II	III	IV	V	VI	VII	VIII	IX	X
beautiful-ugly			P	c						CP
clean-dirty			CP		P		P	P		CP
fair-unfair			CP					CP	C	C
good-bad		P	CP			P			P	CP
happy-sad		P	CP		C			CP	P	C
kind-cruel		P	P	c				P	C	C
wise-foolish	CP	P	P	P				P	C	
brave-cowardly	CP	C	C		P				C	
hard-soft						p	c	c		
heavy-light			c		c		c	C		c
large-small	C			C		C			P	
masculine-feminine										
rough-smooth				C		p				
strong-weak	P			C				P	CP	P
active-passive	P	CP	CP	P	CP	P	C	CP	C	CP
angular-rounded	C				CP			P		
fast-slow	P		CP				P			C
hot-cold										
reckless-cautious								P		
sharp-dull	CP	C		P				c	CP	

NOTE: "c" denotes that a significant number of the ratings made on the cards were toward the right side of the continuum. "p" denotes the same for percepts.

"C" denotes that a significant number of the ratings made on the cards were toward the left side of the continuum. "P" denotes the same for percepts.

Table 3
Number of Cards and Percepts Yielding
Significant Chi-Squares for the Three Groups

	Cards	Percepts	Agreement of Cards and Percepts
College	94	70	56
Grade-School	96	67	46
Schizophrenic	51	52	21

Table 4
z Scores Between Groups on the Proportion of Scales
for Cards and Percepts Yielding Significant Chi-Squares

CARDS		
	Grade-School	Schiz.
College	0.32	4.50***
Grade-School		4.78***
PERCEPTS		
	Grade-School	Schiz.
College	0.42	2.11**
Grade-School		1.79*
CARDS AND PERCEPTS IN AGREEMENT		
	Grade-School	Schiz.
College	1.27	4.61***
Grade-School		3.54***

* $p < .05$

** $p < .02$

*** $p < .01$

ing ascribed to the percepts the number of scales yielding significant chi-squares between Groups C and G is not significantly different from what would be expected by chance (5% level). The number of scales yielding significant chi-squares between Groups C and S and between Groups G and S, however, were signifi-

cantly greater than would be expected by chance. Inspection of Tables 5 and 6 indicates that Group S tended to perceive Cards III, IV, and IX more positively than did Group C or G. Few significant differences were found among the groups on the potency or activity factors.

Table 5
Comparison of the Scales Yielding Significant Chi-Squares Between
Groups on Cards — College (C), Grade-school (G), and Schizophrenic (S)

	I		II		III		IV		V		VI		VII		VIII		IX		X	
	C	G	C	G	C	G	C	G	C	G	C	G	C	G	C	G	C	G	C	G
	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S
beautiful-ugly	*	*	*		*		*		*		*						*			
clean-dirty		*		*	*			*			*						*		*	
fair-unfair		*		*	*			*			*						*		*	
good-bad		*					*				*								*	
happy-sad		*		*			*				*								*	
kind-cruel		*		*			*				*								*	
wise-foolish	*			*				*			*									*
brave-cowardly							*				*									
hard-soft	*			*		*		*		*						*		*		
heavy-light				*		*		*								*		*		
large-small				*		*		*		*						*		*		
masculine-feminine		*				*					*								*	
rough-smooth		*									*						*			*
strong-weak	*										*					*		*		
active-passive	*	*	*		*		*		*		*					*		*		*
angular-round	*	*	*		*		*		*		*					*		*		*
fast-slow	*	*	*		*		*		*		*					*		*		*
hot-cold	*	*	*		*		*		*		*					*		*		*
reckless-cautious	*	*	*		*		*		*		*					*		*		*
sharp-dull	*	*	*		*		*		*		*					*		*		*
tense-relaxed	*	*	*		*		*		*		*					*		*		*

Table 6

Comparison of the Scales Yielding Significant Chi-Squares Between Groups on Percepts — College (C), Grade-school (G), and Schizophrenic (S)

	I	II	III	IV	V	VI	VII	VIII	IX	X
	C C G G S S	C C G G S S	C C G G S S	C C G G S S	C C G G S S	C C G G S S	C C G G S S	C C G G S S	C C G G S S	C C G G S S
beautiful-ugly	*		*	*			*	*	*	
clean-dirty		*	*	*				*	*	
fair-unfair			*	*				*	*	*
good-bad				*				*	*	*
happy-sad	*			*		*		*	*	*
kind-cruel			*	*				*	*	*
wise-foolish		*	*	*		*	*	*	*	*
brave-cowardly										
hard-soft					*					
heavy-light			*	*	*					
large-small	*		*	*	*			*		
masculine-feminine			*	*	*	*	*	*	*	*
rough-smooth						*				
strong-weak				*	*	*			*	*
active-passive				*						
angular-round		*	*	*	*			*		
fast-slow		*		*	*			*	*	*
hot-cold		*		*	*			*	*	*
reckless-cautious		*	*	*	*			*	*	*
sharp-dull				*				*	*	*
tense-relaxed				*				*	*	*

DISCUSSION

As in groups of normal college students, grade school students and schizophrenic Ss also tend to assign consistent connotative meanings to Rorschach inkblots and their percepts. For schizophrenics, however, there are a smaller number of scales viewed consistently in any one direction than for either of the other groups. The connotative meanings assigned to cards and percepts appear to be relatively consistent over a considerable age range; and they do not appear to be seriously influenced by puberty or adolescence. We may speculate that this tendency to view these stimuli in certain consistent ways may extend in both directions chronologically, though as yet this remains to be tested. Whatever factors are involved in determining the connotative meaning of stimuli, they appear to be functioning differently and less consistently in schizophrenics. It would seem advisable to examine in more detail the nature of the differences in connotative meaning ascribed to various stimuli, as well as its ontogenesis, to further our understanding of the schizophrenic process. By comparing the development of connotative meanings in normal and clinical groups we may also further our understanding and diagnosis of these various groups.

As would be expected in relatively normal Ss, the consistency of connotative meaning ascribed to the unstructured inkblots was less than to that ascribed to the more structured percepts. An inkblot that may look like a bat does not convey the same consistency of meaning as *bat* does. Schizophrenics tend to differ on the percept as well as in regard to the unstructured card. It may be that the meanings of concepts or the thought processes involved in learning and ascribing meanings to concepts is more fluid in schizophrenics. Schafer (1948) indicates that fluidity of percepts is characteristic of schizophrenics. This fluidity or tendency of schizophrenics to perceive the cards and percepts as having different connotative characteristics than do the normals in this study, may be the basis of the low $F+$ characteristically found in schizophrenic protocols. In this light $F+$ based

on commonality or frequency may be given more value in the diagnosis of schizophrenics. It also appears as though the evaluative quality of the cards and percepts may likewise be of similar importance, since Group S tended to ascribe more positive evaluative qualities to inkblots and percepts than did normals. Since affect would appear to be directly influenced by the types of attitudes studied, there may be a relationship between the inappropriate affect characteristic of schizophrenics and the "inappropriate" or at least different meanings they ascribe to stimuli.

It is apparent that further information about various clinical groups as well as about the stimulus characteristics of the of the Rorschach may be learned from similar studies which make systematic comparisons with existing data obtained with similar instruments.

REFERENCES

- Little, K. B. Connotations of the Rorschach inkblots. *Journal of Personality*, 1959, 27, 397-406.
- Loiselle, R. H. & Kleinschmidt, A. A comparison of the stimulus value of Rorschach and their percepts. *Journal of Projective Techniques*, 1963, 27, 191-194.
- Osgood, C. E., Suci, J., & Tannenbaum, P. H. *The measurement of meaning*. Urbana: University of Illinois Press, 1957.
- Rabin, A. I. A contribution to the "meaning" of Rorschach's inkblots via the Semantic Differential. *Journal of Consulting Psychology*, 1959, 23, 368-372.
- Schafer, R. *The clinical application of psychological tests*. New York: International Universities Press, 1948.
- Zax, M., & Benham, F. G. The stimulus value of the Rorschach inkblots as perceived by children. *Journal of Projective Techniques*, 1961, 25, 233-237.
- Zax, M., & Loiselle, R. H. Stimulus value of Rorschach inkblots as measured by the Semantic Differential. *Journal of Clinical Psychology*, 1960, 16, 160-163. (a)
- Zax, M., & Loiselle, R. H. The influence of card order on the stimulus value of Rorschach inkblots. *Journal of Projective Techniques*, 1960, 24, 218-221. (b)
- Zax, M., Loiselle, R. H., & Karras, A. Stimulus characteristics of Rorschach inkblots as perceived by a schizophrenic sample. *Journal of Projective Techniques*. 1960, 25, 439-443.
- Robert H. Loiselle
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A Controlled Rorschach Investigation of Hypnotic Age Regression¹

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Summary: Much research in hypnotic age regression has lacked appropriate controls. It was hypothesized that motivated, unhypnotized subjects would perform in a similar manner to hypnotized subjects on the Rorschach Test scored according to developmental levels. Six subjects received a Rorschach administered under normal conditions and under hypnotic regression, with order of administration reversed for half of the subjects to control for practice effect. Three subjects received a Rorschach under normal conditions and under simulated regression.

Each subject showed a significant drop in developmental score under hypnotic-regressed or simulated conditions.

No significant difference was found between hypnotically regressed subjects and control subjects. Differential effects of order-of-administration were not manifested. Hypnotically regressed performance did not appear to be more authentic than simulated performance.

Will the regression of an adult personality, through hypnosis to any suggested level of childhood, reinstate a genuine reproduction of the characteristic functioning of that age level, or does such an hypnotic age regression merely produce a form of "role playing" in which the subject, perceiving the wishes of the investigator, utilizes an adult structure of functioning to "simulate" the desired behavior?

Recent reviews of studies on hypnotic age regression by Barber (1962a), Gebhard (1961), and Gorton (1959) conclude that there is no "true" age regression under hypnosis. The phenomenon that is observed has been variously described as constituting more a "role playing" (in the sense of vivid exercise of imagination) than an actual reinstatement of any childhood level of functioning. It has further become evident that new questions concerning age-regression hypnosis and the structuring of experiments in that area have arisen to replace the original question that generated this body of research.

T. X. Barber (1961, 1962a, 1962b) has underscored the general lack of uniform controls in past hypnosis experimentation in general, and in past hypnotic age-regression experiments in particular. Barber noted that possible errors in experimental methods left a great deal of past

research in this area open to question and the conclusions drawn from many of these experiments in a rather tenuous status, at best.

The performance of control subjects in age-regression experiments may be seen to equal or surpass the actual performances of the hypnotized Ss when even minimal controls for essential variables are present. Barber (1961) further stated: "When given the suggestion that he is a child, the 'good' hypnotic subject may vividly imagine that he is a child and may perform some child-like behavior; however, it has not been demonstrated that during such 'hypnotic age-regression' earlier patterns of behavior are revived that could not be performed voluntarily by an appropriately motivated but unhypnotized adult."

Pursuing Barber's position, it may be hypothesized that, in an experiment in which two groups of Ss are used, one undergoing hypnotic age regression and the other being asked to simulate age regression, under normal conditions, to a comparable age level, and in which uniform controls under uniform conditions are maintained, no significant differences between groups will be found on a selected criterion measure. The selected criterion measure used in this experiment is the Rorschach Test, administered intact as a perceptual task and scored developmentally according to a system which has as its basis Heinz Werner's (1948) orthogenetic principles of development.

What this implies is that the kinds and characteristics of operations underlying

¹ Based upon a Master's thesis by the senior author, carried out at the City College of The City University of New York. The author is indebted to Dr. Theodore Thass-Thienemann for his aid in supervising the hypnotic procedures utilized in this experiment.

behavior may change and a more accurate picture of the individual's performance under age-regression hypnosis and in the simulated state may be gained by systematically analyzing the types of operations used in, and underlying, his perceptual performance.

Wilensky's modification of the developmental scoring system for the Rorschach Test was selected (Wilensky, 1959a, 1959b; Goldfried, 1962). This method, applied to a study of the comparative productions of hypnotized and non-hypnotized groups in age regression and simulation, respectively, provided a measure of finer discrimination than has been used in past hypnosis studies employing the Rorschach Test as a criterion measure.

Method

Subjects

A total of nine *Ss*, six female and three male, were used, ranging in age from 22 to 28, with a mean age of 24. Seven of the nine *Ss* were college graduates, and the remaining two, both female, had each had two years of college.

All *Ss* were required to be willing volunteers, that is, they must have volunteered without urging or coercion of any sort, being informed that the experiment was to be in the area of hypnosis and that they would be required to undergo hypnosis. No further information as to the nature of the experiment was given. All *Ss* were required to exhibit the ability to achieve a pre-determined criterion level of hypno-

tizability on the Davis and Husband Scale (Davis and Husband, 1931), and assignment to the experimental (E_1 , E_2) and control (*C*) groups was carried out on a random basis. At no time were the control *Ss* informed of their status. All *Ss* began and completed the experiments with equal expectations of being hypnotized.

Criterion Measure

(1) The Rorschach Test was used as a standardized perceptual tool. The Rorschach response scores for each subject were evaluated in terms of Wilensky's (1959a, 1959b) modification of the developmental scoring scale as a final measure of performance. The administration of the Rorschach Test was carried out according to standard procedure (Klopfer & Davidson, 1962), with the exception that the inquiry was conducted after each card had been presented. Once a *S* had indicated that he was finished with a card, no attempt was made to elicit further material. The revised *DL* scoring system was based upon the general principles developed by Phillips and Smith (1953). Becker's modification (1956) permitted the calculation of an overall *DL* score based upon ratings assigned to each response. Wilensky (1959b) introduced a number of changes in an attempt to refine the measure. The current revision entailed essentially an extension of the range of ratings to 11 points. In this scoring system each response is rated, and average ratings per card are calculated. A brief outline of the scoring guide is presented in Figure 1.

Figure 1
Revised Developmental Scoring System

Rating	Location and Form Level	Description
10	<i>W++</i> , <i>D++</i>	Integrated, good form, determinants used. I. "Circus Act." Well-elaborated populars are accepted on "broken" blots.
9	<i>W+</i> , <i>D+</i>	Integrated, good form, one element may be vague. VIII. "Rats climbing up a tree." Animals climbing on rocks. Specific animals must be named, otherwise score 8.
8	<i>Wm</i> , <i>Dm</i>	Clearly perceived, but unelaborated populars; mediocre good form responses. V. "A bat."
7	<i>Dd++</i> , <i>Wm</i> , <i>Dm</i>	Integrates small or unusual details. Mediocre good form precepts of "animals" unspecified or unelaborated "heads," "insect," "bug," and "animal skin" unelaborated to popular areas (IV or VI).
6	<i>Dd+</i> , <i>Dv</i>	Small or unusual details of good form, oligophrenic detail. Vague indefinite <i>D</i> responses (<i>KF</i> , <i>CF</i> clouds, rocks, map, rug, X-ray, landscape). Content is reasonable, matched to area.

5	<i>Wv</i>	Vague form <i>W</i> responses. Cotton candy, art, branches, leaf, animal skin, maps.
4	<i>Ddv</i>	Vague, indefinite form, small or unusual details. <i>CF</i> , <i>KF</i> . Puzzle, design, spot of blood, piece of fur, patch of snow.
3		Card rejections or responses bordering between vague form (<i>CF</i>) and pure color (<i>C</i>) or shading (<i>cF</i> and <i>c</i>). (Rejections are assumed to reflect some control in that the pathological responses are withheld.)
2	<i>D-</i> , <i>Dd-</i> , <i>Da</i>	<i>C</i> or <i>CF-</i> to <i>D</i> or <i>Dd</i> areas. All <i>F-</i> and amorphous responses. Content could apply to any area. Queer responses.
1	<i>W-</i> , <i>Wa</i>	<i>C</i> , <i>CF-</i> responses to <i>W</i> areas. Queer responses, color naming. Amorphous responses such as paint, blot, smear, mess.
0		Pathological responses. Bizarre, irrelevant, absurd combinations.

The upper end of the scale (8-10) includes good form, differentiated, and possibly elaborated and integrated *W* or *D* responses. The intermediate range (4-6) includes the vague or indefinite percepts of the whole or large areas which are of minimally adequate form level. Unusual or small details of good form are also included in this intermediate range. The rating of 7 is a borderline category for indefinite or vague form responses which are popular, or the rare, exceptionally well integrated *Dd*. The low end (0-2) is characterized by the poor form, amorphous, and bizarre responses. A rating of 3 is again a borderline category which also includes rejections. For each repetition of content in a separate response, the assigned rating is reduced by one point (e.g., "bat" to card 1 is rated 8; repeated on card 5, rated 7, and so forth).

(2) The "imaginative" tasks (discussed below) required of all *Ss* during the preliminary session were simple, unstandardized activities, such as asking the person to write his name as if he were a ninety-year-old individual, or to draw a picture as if he were a young child.

Procedure

All sessions were carried out on an individual basis, with both experimental and control *Ss*.

Session 1. This was the same for all *Ss* and constituted, essentially, a selection session. Approximately, fifteen minutes were allowed to each *S* for questions concerning hypnosis in general. Each *S* was

then tested for susceptibility against the Davis and Husband Scale. A score well within the "light trance" area was required.

Session 2. For experimental groups *E*₁ and *E*₂, session 2 was essentially a training session. *Ss* were placed under deep hypnosis and asked to perform the simple imaginative acts, as mentioned above. Attainment of somnambulism was determined by the ability of the *S* to exhibit criterion behaviors for somnambulism, again, as listed by Davis and Husband (1931). Hypnosis was induced by a combination of eye fixation and verbal suggestion (Rhodes, 1963).

With the exception of the induction of hypnosis, which was not performed, the procedure for the control group (Group *C*) was the same as for groups *E*₁ and *E*₂. The desired end here was to allow the control *Ss* an equal exposure to a pre-test situation as the experimental subjects were allowed. The control *Ss* were asked to perform the same imaginative acts. Insofar as it was absolutely possible, equal encouragement and verbal reinforcement were given to all *Ss*.

Session 3. Group *E*₁ *Ss* were placed under deep hypnosis (Rhodes, 1963; Davis & Husband, 1931). As soon as a deep state of somnambulism was achieved, the *S* was left alone for a time to deepen the hypnotic state further (Wolberg, 1945, 1948). Subsequently, the *S* was regressed to the six-year age level according to the method suggested by Wolberg (1945, 1948) for use with good *Ss*. Following

this, the Rorschach Test was administered. (It is emphasized that at no time was the *S* told he would act or perform as a six-year-old child, nor were any leading suggestions extended. The *S* was simply regressed to that age level and then administered the criterion measure.) After the Rorschach administration, the *Ss* were re-oriented as to time, age, place, and so forth, post-hypnotic amnesia was suggested, and the *Ss* were returned to the waking state.

For groups E_2 and C, the session 3 consisted of a standard administration of the Rorschach Test.

Session 4. For group E_1 , the same as groups E_2 and C, session 3. For group E_2 , session 4 was the same as for group E_1 , session 3. For group C, at this time, the control group was asked to take the Rorschach Test and respond to it as if they were six-year-old children.

Results

All Rorschach protocols were scored developmentally by the authors. First, a mean *DL* score was calculated for each card and then a mean overall *DL* score for the protocol was calculated from the 10 individual card *DL* scores. Problems in rating responses were resolved through discussion between the authors.

A repeated measures analysis of variance for the three groups under the standard and regressed administrations was carried out. The summary of the analysis is presented in Table 1. The one significant *F*-ratio was found for the main effect between standard and regressed administrations regardless of group, indicating that *DL* scores did differ according to mode of administration. There were no significant differences between the three groups as a main effect, nor in the interaction of trials (the two administrations) and groups. These findings indicated that the three groups did not differ in either the standard or regressed administrations. The nonsignificant differences between groups for the standard administration was anticipated because the *Ss* were assigned to groups on a random basis. In accord with the main hypothesis, the *DL* scores of the hypnotically regressed and the simulated regressed groups (E_1 , E_2 , and C) were not significantly different.

The effect of instructions to regress, whether under hypnosis or under simulated regression, can also be seen in the comparison of each *S*'s performance on the ten Rorschach cards under the standard and regressed conditions.² By treating each *Ss* performance as a separate sample and comparing the ten pairs of *DL* scores (one standard and one regressed

Table 1
Analysis of Variance
of *DL* Scores of E_1 , E_2 , and C Groups
of *Ss* Tested under Standard and Regressed Administrations

Source of Variance	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>
Between Groups	2	.014	1	n.s.
Between <i>Ss</i> within groups	6	.250		
Between Trials (Standard & Regressed)	1	19.552	182.73	.01
Interaction: Trials x Group	2	.200	1.97	n.s.
Interaction: Pooled <i>Ss</i> x Trials	6	.107		

Table 2
Mean *DL* Scores for Standard and Regressed
Conditions and Individual *t*-Tests and *P*
Levels for Differences Between Individual
Subject's Means^a

Subject	Means		t	P	
	Standard	Regressed ^b			
E ₁	1 (male)	5.87	3.79	2.75	.01
	2 (female)	6.09	4.37	4.91	.001
	3 (female)	6.25	4.71	3.40	.001
	group means	6.07	4.29		
E ₂	1 (female)	7.03	3.85	5.21	.001
	2 (female)	6.00	4.04	10.80	.001
	3 (male)	6.05	3.85	2.89	.01
	group means	6.36	3.91		
C	1 (male)	6.63	5.00	2.78	.01
	2 (female)	6.03	3.94	4.97	.001
	3 (female)	6.07	4.01	3.68	.001
	group means	6.24	4.31		

^aFor each *S t* tests were carried out testing the difference between the *DL* scores for each Rorschach card under standard and regressed conditions.

^bGroups E₁ and E₂ were regressed under hypnosis. Group C was instructed to simulate regression.

score per card), separate *t*-tests for differences between correlated means were calculated for each of the nine *Ss*. The *t*-tests for the differences between the means of the standard and regressed administrations were significant for each of the nine *Ss*. The overall mean *DL* scores for each subject under both conditions, the *t*-ratios, and the *P*-levels for the differences between the two types of administrations presented in Table 2.

Discussion

This experiment undertook to test the hypothesis that in a properly controlled

experimental situation, involving adult subjects hypnotically regressed to a six-year age level and unhypnotized control *Ss* (pre-tested to determine their hypnotizability) asked to simulate the six-year level, no significant difference would be found between their relative scores on an appropriate criterion measure. Implicit in this hypothesis was Barber's (1961) general contention that properly motivated adults, acting outside of the hypnotic state, that is, acting only under directions, could duplicate the best performances of hypnotized *Ss* on criterion measures. The results of the analysis of the experimental data bear out the hypothesis in all significant respects.

There were no significant differences between the experimental and control groups on standard administrations of the Rorschach Test under normal conditions.

² These calculations represent an expansion of the finding of a significant *F*-ratio in the analysis of variance for the main effect differences between trials.

Each *S*, however, did perform at a developmentally lower level when instructed to do so, whether the instructions to regress were given under hypnosis or under non-hypnotic (controlled) conditions. Individual *t*-tests demonstrated that there were highly significant differences between each individual's normal and regressed protocols. A comparison between the hypnotic and simulating groups for extent of regression (size of the differences between standard and regressed conditions) showed no significant difference between experimental and control *S*s on the experimental and simulated administrations.

Barber (1962a) had suggested that when *S*s are used as their own controls, order-of-administration of the criterion measure may influence the results. If the control treatment is administered prior to the experimental treatment, the *S*s will gain experience with the criterion measure, the result being a possible confounding of results. In order to control for this order effect, the experimental (*E*₂) group had been included. This group received the criterion measure (regressed Rorschach first) in reverse order from that of experimental group *E*₁. In this case the data did not support Barber's contention.

As would be expected with an analysis showing no significant difference between groups under the experimental and control conditions, the calculated means of the overall *DL* scores for the *S*s in all three groups (*E*₁ = 4.29, *E*₂ = 3.91, and *C* = 4.31) clustered closely together. The absence of differences among groups did not support Sarbin's (1950) contention that the hypnotically regressed performance is more "authentic" than the simulated regressed performance. It is possible that authenticity of regression might be measured in some other manner such as voice quality.

The results would seem to support Hilgard's (1965) suggestion that susceptible *S*s, whether hypnotized or simulating, do not appear to differ extensively in their role-playing abilities.

Developmental scoring of Rorschach protocols proved to be effective for dealing quantitatively with differential percep-

tions under standard and both simulating and hypnotic regressed administrations. Typically, qualitative differences in performance were in the direction of disintegration, (e.g., Card IV, Standard Administration: "A giant with huge feet wearing a revolutionary cocked hat and carrying two dead geese." Hypnotic regressed: "two big feet," and (later) "two dead geese"), lack of elaboration (e.g., Card I, Standard Administration: "A big bat." Inquiry: "The whole thing. Its wings are open like when it flies. Its shape, and it seems to be holding on to something. There doesn't seem to be any definite head, but it has this tail and big wings." Simulating: "An animal." Inquiry: "The whole thing. (Q) It has wings, that's all."), and vagueness of the percept (e.g., Card VII, Standard Administration: "A crab's claw." Inquiry: "The whole thing, the shape, and it looks like it's pinchers are closing." Hypnotic regressed: "Dirty snow that's melting." Inquiry: "The whole thing, the color. It's not even in shape.") Amorphous, irrelevant and contaminated responses appeared occasionally under both simulating and regressed conditions. Response production also tended to be less under simulating and regressed conditions.

References

- Barber, T. X. Experimental evidence for a theory of hypnotic behavior: II Experimental controls in hypnotic age regression. *International Journal of Clinical & Experimental Hypnosis*, 1961, 9, 181.
- Barber, T. X. Hypnotic age-regression: A critical review. *Psychosomatic Medicine*, 1962, 23, 286-299. (a)
- Barber, T. X. Experimental controls and the phenomena of hypnosis: A critique of hypnotic research methodology. *Journal of Nervous & Mental Disorders*, 1962, 6, 493. (b)
- Becker, W. C. A genetic approach to the interpretation and evaluation of the process reactive distinction in schizophrenia. *Journal of Abnormal & Social Psychology*, 1956, 53, 229.
- Davis, L. W. & Husband, R. W. A study of hypnotic susceptibility in relation to personality traits. *Journal of Abnormal & Social Psychology*, 1931, 26, 175.
- Gebhard, J. W. Hypnotic age-regression: A review. *American Journal of Clinical Hypnosis*, 1961, 3, 139.

- Goldfried, M. R. Some normative data on Rorschach developmental level "cardpull" in a psychiatric population. *Journal of Projective Techniques*, 1962, 3, 283.
- Gorton, B. E. The physiology of hypnosis. *Psychiatric Quarterly*, 1959, 23, 317, 457.
- Hilgard, E. R. *Hypnotic susceptibility*. New York: Harcourt, Brace & World, 1965.
- Klopfer, B., & Davidson, Helen. *The Rorschach technique*. New York: Harcourt, Brace & World, 1962.
- Phillips, L. & Smith, J. G. *Rorschach interpretation: Advanced technique*. New York: Grune & Stratton, 1953.
- Rhodes, R. H. *Hypnosis: Theory, practice, and application*. New York: The Citadel Press, 1963.
- Sarbin, T. R. Mental changes in experimental regression. *Journal of Personality*, 1950, 19, 221.
- Werner, H. *Comparative psychology of mental development*. New York: Science Editions, 1948.
- Wilensky, H. Rorschach development level and social participation of chronic schizophrenics. *Journal of Projective Techniques*, 1959, 23, 87. (a)
- Wilensky, H. Developmental scoring of Rorschachs of schizophrenics. Paper presented at East. Psychol. Assoc., Atlantic City, April, 1959. (b)
- Wolberg, L. R. *Medical hypnosis*. New York: Grune & Stratton, 1948.
- Wolberg, L. R. *Hypnoanalysis*. New York: Grune & Stratton, 1945.
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Rorschach Responses and Aggressive Characteristics of MMPI $F > 16$ Scorers

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Summary: Psychiatric patients with MMPI $F > 16$ scores (E group) were matched with patients having similar diagnosis but F scores of 3-12 (C group) to assess personality characteristics of high F scorers. In Experiment I, E and C group Rorschachs showed no significant differences on formal scored characteristics. E group patients marked a significantly greater number of "obvious" than "subtle" MMPI items. In Experiment II, there was no significant E and C group difference in Rorschach aggressive content. Data from the hospital charts indicated that $F > 16$ scorers had a significantly higher frequency of overt, actively directed anger and suicidal behavior plus a greater total incidence of hostile behavior across a variety of categories.

There is increasing evidence that MMPI profiles with F scale raw scores greater than 16 are not necessarily "invalid," in the sense of failing to provide substantial clinical information about the respondent (Gynther, 1961; Gauron, Severson, & Englehart, 1962; Marks & Seeman, 1963; Gynther & Shimkunas, 1965). The original intent of the F scale was to indicate response sets, such as "fake bad," malingering, etc., which would inform the examiner that the patient failed to comprehend the meaning of the questions or marked his answers in a manner different from the instructions (Meehl and Hathaway, 1956). Meehl and Hathaway hypothesized that F scores up to 16 (T score=80) are "a reflection of 'validly' unusual symptoms and attitudes" rather than an indication per se of an invalid profile. Meehl and Hathaway do not elaborate the type of personality characteristics of high F scale scorers, other than that such individuals are likely "schizoid."

Other investigators have been concerned with situational instructional effects on the elevation of F scale scores. Brozek and Schiele (1948) found that S s tested before and after participation in a semi-starvation experiment showed an F scale elevation in the post-experimental testing. Moreover, the increased F items generally had appropriate correspondence to reported experience, and did not appear to indicate attempts to invalidate the MMPI. Several studies (Gough, 1947; Hunt, 1948; Cofer, Chance, & Judson, 1949) have shown that individuals asked to deliberately distort their answers in a

negative or "fake bad" direction will show an elevated F and an exaggerated $F-K$ imbalance. In the usual study of this type, normal S s are asked to respond in a distorted manner to MMPI items. The meaning of an elevated F scale, in such a case, may be quite different from the clinical significance of an elevated F scale produced by a patient who has not been externally instructed to respond with a deliberate set. It would thus seem important to examine the behavior of patients with elevated F scores in regard to what behavioral predictions could be made on the basis of such test scores.

The majority of additional experimental work on high F scale scorers has been concerned with demographic or diagnostic characteristics. Several authors have noted that individuals with delinquent or other anti-social behavior disorders may commonly show $F > 16$ elevations (Schneck, 1948; Hathaway & Monachesi, 1953; Gynther, 1961; Gynther & Shimkunas, 1965). McKegney (1965) verbally administered the MMPI to a sample of 29 institutionalized delinquents and obtained a mean F score of 15.4. Item analysis suggested that the F elevation was an accurate reflection of "honest" answers to items concerning problem areas common to this specialized group of individuals, e.g., impulse control and general mistrust of others.

Further empirical studies suggest that $F > 16$ scores are associated with (a) psychopathy and aggressive acts in court cases referred for psychiatric examination (Gynther, 1961), (b) youthfulness (Gynther,

1961; Gauron, et al., 1962), (c) certain forms of sex crimes (Gynther, 1962) and (d) psychosis in routinely admitted male and female psychiatric patients (Gynther & Shimkunas, 1965). Dahlstrom and Welsh (1960) state that high *F* scale scores are usually produced by patients with frank psychoses. Leary (1957) suggests that the *F* scale measures hostility and aggression while Block and Bailey (1955) and Gough, McKee, and Yandell (1955) indicate it to be a measure of nonconformity.

In summary, previous experimental work has dealt with situational, instructional effects on *F* scores or with the demographic characteristics of high *F* scale scorers. Little systematic attempt has been made to assess personality features, behavior patterns, or psychodynamic themes. Two hypotheses are suggested in regard to clinical and behavioral features of $F > 16$ scorers. (1) Their test responses were determined by the psychometric nature of the *F* scale itself, and as such the only "clinical" information to be obtained is limited to implications as to how such individuals "take" "objective" psychological tests. (2) The response to the test has implications for predicting the behavior of such individuals in a variety of other test and life situations. The present study tested these two hypotheses. Two experiments are reported: Experiment I deals with Rorschach characteristics of $F > 16$ scorers and Experiment II with aggressive behavior in such individuals. In both studies a psychiatric patient population of $F > 16$ scorers is utilized.

Experiment I

If high *F* scorers give some indication of genuine psychological disturbance (see Brozek & Schiele, 1948; McKegney, 1965) one would expect this to be reflected in their Rorschach responses, assuming concurrent validity of the Rorschach and the MMPI. Adams, Cooper, and Carrera (1963) found concurrent validity for the two tests and obtained, in addition, a significant negative correlation between MMPI *F* scores and Rorschach weighted *M* and *FM* from Klopfer's Prognostic Rating Scale (see Klopfer, Ainsworth, Klopfer, & Holt,

1954) suggestive of a poor prognosis for the high *F* scorer. Adams, et al. (1963) did not use an extreme group of high *F* scale scorers nor were they concerned with personality characteristics in relation to *F* scale scorers. Assuming genuine disturbance, one would expect the Rorschach protocols of a group of $F > 16$ scorers to differ on a variety of Rorschach response characteristics from those of a group of matched controls having MMPI *F* scores in the usual (3-12) range. Experiment I tested this hypothesis.

Method

Test batteries of all patients referred for psychological testing in a large university medical center during the period 1960-1965 were examined. The majority of these patients (approximately 70%) were psychiatric inpatients at the time of testing. The rest were psychiatric outpatients (20%) or inpatients on other hospital services (10%). There were 48 patients (24 male and 24 female, designated as experimental groups EM and EF respectively) who had $F > 16$ scores ($T > \text{score } 80$) and who had also been given a Rorschach. All $F > 16$ profiles were screened to try to determine if the high *F* score was obtained by random answering of the MMPI items. The profiles were compared with the random profiles given in Dahlstrom and Welsh (1960). Only two $F > 16$ profiles (4% of the total sample) appeared to be similar to a random profile. As this represented a small proportion of the total sample, these patients were included in the study.

Experimental ($F > 16$) patients were then matched on the basis of age, sex, amount of education, and psychiatric diagnosis (i.e., neurotic and personality disorder, organic, or psychotic) with 48 control patients (24 males and 24 females, designated as groups CM and CF) having *F* scores between 3 and 12 (T score 50-70). The only other limitation on selection of control patients was that the group mean number of Rorschach responses for each C group was not significantly different from that of its respective E group. This selection procedure served to control

for individual differences in number of Rorschach responses.

Diagnostically, the sample breakdown was as follows: for the males, 33% neurotic and personality disorder, 17% organic and 50% psychotic. Percentages for the females were 33%, 8% and 58% respectively. Mean ages were male E 23.62, male C 22.46, female E 24.00 and female C 24.88. Breakdown by educational level attained showed for the males: 38% one year of college and beyond, 12% high school graduate, 33% some high school and 17% less than high school. Respective figures for the females were 21%, 12%, 62% and 4%. The only significant sex difference in sample characteristics was that a greater number of female Ss than male Ss ($\chi^2=4.08$, $P<.05$) had had some high school (9-11 years).

The Rorschachs of all 96 patients were then scored by an experienced examiner according to the method advocated by Klopfer, et al. (1954). Scoring was done blindly with respect to E and C group Ss. Formal characteristics (e.g., $F\%$, $M\cdot\Sigma C$, $W:M$, etc.) were tabulated for the indices given by Klopfer and Davidson (1942). In addition, weighted M and FM scores from Klopfer's Prognostic Rating Scale were obtained. The scoring of original responses was omitted, as it was felt to rely too heavily on the subjective judgment of the scorer. The effect of differing numbers of responses on scored categories was further attenuated by scoring no more than 30 responses on any one Rorschach. This meant that no more than the first 4 responses on any one card were scored with protocols where the total number of responses was greater than 30.

As a control for scoring bias, another experienced examiner scored a random sample of the Rorschach protocols. Inter-scoring agreement was 86% for the formal characteristics, 92% for weighted M , and 90% for weighted FM .

Results

The mean F raw score and standard deviation for the EM group was 20.42, $\sigma = 4.14$; for CM 6.08, $\sigma = 2.57$; for EF 22.58, $\sigma = 5.35$; and for CF 5.75, $\sigma = 2.91$. As would be expected, the E and C

groups differed on other MMPI subscales, the E group being higher on all the clinical scales and lower on the L and K validity scales. As only the F scale differences between the E and C groups were being considered, the other MMPI differences were computed but are not presented because of space limitations. According to the profile pattern, the E groups had mean MMPI profiles that suggested more psychological disturbance than the mean profiles of the C groups.

Analysis of the mean Rorschach formal scores for the E and C groups indicated no significant difference on any of the scored indices, as analyzed by t tests. Moreover, the weighted M and FM scores for paired subjects in the E and C groups were not significantly different when a sign test was applied to the data. Thus, although the mean MMPI profiles are quite different for the E and C groups, the Rorschach protocols do not reveal significant differences between the groups on formal scored characteristics.

Discussion

The difference between the E and C groups on the MMPI and the lack of difference on the Rorschach might be due to several factors: (a) the greater "structure" provided by an "objective" test (MMPI), as compared to a "projective" one (Rorschach), with the likelihood of the patient slanting the former more in the direction of severity of disturbance; (b) the tests clearly measure different types or degrees of psychopathology. Therefore, a person could show greater disturbance on one test than on the other. A study by Goldfried (1962) would appear to support the latter conclusion. Severity of pathology estimates on 50 male psychiatric patients were obtained in terms of both Rorschach developmental level scores (see Friedman, 1953) and MMPI diagnostic classification according to the Meehl & Dahlstrom (1960) rules. Goldfried found no significant relationship between these two estimates of severity of pathology, and suggested the possibility that different "levels" of functioning were being measured by the psychometric instruments.

Further support for alternative (a), that the $F>16$ patient may have more readily slanted his MMPI answers in a manner to indicate greater severity of pathology, was obtained in the present study by scoring Wiener's (1948) "subtle" and "obvious" MMPI scales for the E and C groups. Significant group differences were obtained, with the EM and EF groups marking a significantly greater percentage of obvious than subtle items, while the reverse held for the CM and CF groups. Significant X^2 's for the scales keyed to such a breakdown were: D , $X^2 = 11.65$, $p < .001$; Hy , $X^2 = 15.72$, $p < .001$; Pd , $X^2 = 8.82$, $p < .01$; Pa , $X^2 = 18.22$, $p < .001$; and Ma , $X^2 = 4.50$, $p < .05$. These results indicate a highly significant relationship between tendency to mark F scale items and willingness to respond with what the patient may realize to be an obvious admission of psychopathological disturbance.

The present study fails to replicate the findings of Adams, et al. (1963) of a significant negative correlation between weighted M and FM Rorschach Prognostic Rating Scale scores and MMPI F scores. However, there was a trend in this direction. Examination of matched E and C group subject pairs indicated more $F>16$ patients had weighted M and FM scores in the direction of "poorer" prognosis. However, sign tests for E and C group differences were not significant. There was one exception to this general trend; more C group than E group females had weighted M scores in the direction of "poorer" prognosis. It should be noted that an extreme group of F scale scorers was employed in the present study while Adams, Cooper, & Carrera used a sample of 36 neuropsychiatric patients with a median MMPI F score of 5.3 (S.D. = 6.3). Thus, the difference in sample selection would appear to place a definite limit on the comparability of the two studies.

In conclusion, the Rorschach responses of patients with $F>16$ MMPI profiles were not significantly different on formally scored characteristics from those of matched patients with F scores of 3-12. Rorschach formal characteristics thus fail to further elaborate personality characteristics of patients with MMPI $F>16$

scores. The alternative hypotheses remain that differences in Rorschach *content* responses or in the recorded or measured behavior of $F>16$ patients might further elaborate personality characteristics of these patients. A limited attempt to test these alternative hypotheses was undertaken in Experiment II.

Experiment II

In order to study an isolated and somewhat restricted segment of the behavior of $F>16$ patients, the hypothesis of high F scores as reflecting aggressive behavior characteristics was tested. Such a hypothesis was proposed by Leary (1957) and by Gynther (1961), the latter as assessed from a criminal and/or delinquent population. Shipman (1965) studied 120 male and female psychiatric outpatients and found significant positive correlations between the MMPI F scale and three paper and pencil measures of hostility. Ratings of (1) verbal hostility, (2) physical hostility, and (3) hostile attitude were also made in terms of reported past behavior in the patient's medical and psychiatric charts. Verbal rating scales, on which the experimenter assigns the most descriptive adjective from a list ordered along each of the above three dimensions, were employed (see Buss & Gerjuoy, 1957). Shipman found only the physical hostility dimension to be significantly correlated with F scores, and only for males. The correlation between F scores and the paper and pencil measures of hostility was explained partly as the spurious product of a generalized tendency by the patient to say negative things about himself. Three MMPI hostility scales devised by Schultz (1955) did not correlate significantly with F in the Shipman study. It should be noted that Shipman's subjects were not a selected group of high F scale scorers, but represented the usual patient range of F scores.

If hostility is positively correlated with MMPI F scores, one might expect $F>16$ scorers to (a) show more hostility responses or themes on other tests, such as the Rorschach and (b) give evidence of more aggression and hostility in both overt and verbal behavior. Experiment II tests these hypotheses.

Method

The same patient sample of $F > 16$ scorers (E group) used in Experiment I was employed, with the following exceptions. In addition to matching each E and C group patient on age, sex, education, and psychiatric diagnosis, each C group (F of 3-12) patient was from the same hospital ward or clinic and had an approximately (± 5) equal number of Rorschach responses as his respective E group patient. This procedure resulted in 20 male and 22 female matched pairs. All the $F > 16$ subjects had been used in Experiment I; however, the more careful matching procedure resulted in 10 new male and 13 new female control group patients. Group means and standard deviations on the matched dimensions, however, did not change significantly from those of Experiment I. The rationale for matching on these additional dimensions is given below.

Rorschach responses for all patients were evaluated for hostility and aggressive content, according to the scoring system of Elizur (1949) and the modification by Towbin (1959). Three categories of aggressive content were identified: H_1 , or hostility directed from the testee to the card by derogations of the blot or attribution of derogatory qualities to percepts, etc.; H_2 , or hostility scored for objects with a customary aggressive function such as gun, spear, etc.; and H_3 , or hostility from card to testee (aggressive figures such as witches), from an unspecified source to the blot (percepts as objects of attack), and hostility within the card (two figures fighting). Towbin found a significant positive correlation between H_1 scores and behavioral measures of aggression for 48 assaultive hospitalized psychotic veterans and 48 non-assaultive controls. There was no relationship of H_2 and H_3 scores to aggressive behavior.

In the present study, a reliability check for scoring aggressive content showed an overall ($H_1 + H_2 + H_3$) correlation of .88 for a sample of Rorschach protocols scored independently by a second examiner. As content was being evaluated in Experiment II, it was felt that the more careful matching (as noted above) on number of Rorschach responses for each

E and C group pair was necessary.

In addition to Rorschach aggressive content, a behavioral indicant of aggression was obtained. During the period of hospital care when the Rorschach had been administered, an experienced clinician filled out an aggression questionnaire (devised by the author) from the hospital record for all patients. The clinician was not informed as to which group (E or C) the patient belonged. The questionnaire was divided into three main sections including a variety of aggressive behavior categorizations according to the following format:

Aggression Questionnaire— Hospital Records

A. History indications:

- (1) Is there any notation of hostile or aggressive behavior in the patient's history? (e.g., any hostile acting out; destruction of property; physical assaultiveness; self-destruction, such as self-mutilation or suicide)
If so, explain:
- (2) Any indication of arguing, verbal anger, sarcasm or criticalness?
If so, explain:

B. Interview indications:

Is there any notation of verbal or physical anger—overt (e.g., yelling, cursing, striking out) or covert (e.g., sullen, critical, sarcastic) during the resident's interview, medical work-up, or staff examination?
If so, explain:

C. Ward behavior indications:

Is there any notation of overt or covert anger or hostility either self-directed or other directed (see above examples) in the nursing or staff notes?
If so, explain:

Independent assessment by another experienced clinician on a sample of the hospital records indicated 88% agreement as to presence or absence of each type of aggressive behavior and appropriate category. The procedure (mentioned above) of matching E and C patients from the same hospital ward was employed as an attempt to partially control for different

professional "sets" (e.g., predominantly medical vs. predominantly psychiatric) in describing patient behavior by the physician, nurse, orderly, etc., on the hospital chart.

Results

The total Rorschach hostility content ($H_1 + H_2 + H_3$) subject means and standard deviations for the E and C groups were as follows: E males: $\bar{x} = 2.44$, $\sigma = 1.82$; C males: $\bar{x} = 2.11$, $\sigma = 2.00$; E females: $\bar{x} = 5.32$, $\sigma = 4.30$; C females: $\bar{x} = 4.54$, $\sigma = 2.97$. Separate rows-columns analyses of variance for male and female groups, which take into account the matching of subject pairs (Edwards, 1950) showed no significant differences between the E and C groups. Although the females had higher hostility content scores, the difference between the total male and female groups was not significant ($t = 1.32$, $df = 84$). The

data in Experiment II suggest that $F > 16$ patients do not show significantly more hostility in their Rorschach content than patients with F scores in the 3-12 range. Thus, as in Experiment I, the two groups do not differ on scored Rorschach dimensions.

Table 1 presents the data from the patient's hospital charts, as summarized according to overt acting out, suicidal gesture or attempt, suicidal threat or ideation, and verbal anger categories from the aggression questionnaire. Analysis by category indicated the following:

(1) Overt acting out. No significant difference between E and C groups for males and females analyzed separately. Combined male and female data showed a significantly higher frequency ($\chi^2 = 5.11$, $p < .05$) of overt acting out chart notations for the E ($F > 16$) group.

(2) Suicidal gesture or attempt. No

Table 1
Hospital chart indications of hostile behavior.

Category		E males N = 20	C males N = 20	E females N = 22	C females N = 22	E (M+F) N = 42	C (M+F) N = 42
(1) Overt acting out	P ^a	10	4	11	6	21	10
	A ^b	10	16	11	16	21	32
(2) Suicide gesture or attempt	P	5	1	10	4	15	5
	A	15	19	12	18	27	37
(3) (1) + (2)	P	15	5	21	10	36	15
	A	25	35	23	34	48	69
(4) Verbal anger	P	12	8	17	17	29	25
	A	8	12	5	5	13	17
(5) Suicide threat or ideation	P	10	1	7	8	17	9
	A	10	19	15	14	25	33
(6) (2) + (5)	P	15	2	17	12	32	14
	A	25	38	27	32	52	70
(7) Total Aggression [$\Sigma(1)+(2)+(4)+(5)$]	P	37	14	45	35	82	49
	A	43	66	43	53	86	119

^aNumber of patients for whom this behavior is *present*

^bNumber of patients for whom this behavior is *absent*

* χ^2 significant for this cell at $p < .05$

** χ^2 significant for this cell at $p < .01$

*** χ^2 significant for this cell at $p < .001$

All significant differences are in direction E group > C group

significant difference between E and C groups for males and females analyzed separately. Combined male and female data showed a significantly higher frequency ($\chi^2 = 5.32, p < .05$) of suicidal gesture or attempt notations for the E group.

(3) Combined overt acting out and suicidal gesture or attempt. Male ($\chi^2 = 5.40, p < .05$), female ($\chi^2 = 4.88, p < .05$) and combined data ($\chi^2 = 11.26, p < .001$) all indicated significantly greater frequency of this behavior for the E group. This analysis served as an indication of the overt and active direction of anger by the patient, whether toward himself (suicide) or toward the environment (overt acting out.)

(4) Verbal anger. No significant differences between E and C groups, analyzed separately by sex or combined.

(5) Suicidal threat or ideation. Significantly greater frequency ($\chi^2 = 8.02, p < .01$) for E group than C group males. No significant E and C group differences for females or for combined male and female groups.

(6) Combined suicidal gesture or attempt and suicidal threat or ideation. No significant E and C group difference for females. Males ($\chi^2 = 10.76, p < .01$) and combined male and female data ($\chi^2 = 9.84, p < .01$) showed the E group patients had a significantly higher frequency of total suicidal chart notations (whether behavioral, verbal, or ideational) than the C group patients.

(7) Total aggression (combined categories, 1, 2, 4, and 5). No significant E and C group difference for females. Males ($\chi^2 = 13.93, p < .001$) and combined male and female data ($\chi^2 = 12.81, p < .001$) indicated a significantly higher frequency of total aggressive behavior for the E ($F > 16$) group.

Discussion

Analysis of aggressive responses for E ($F > 16$) and C (F of 3-12) matched groups revealed no significant group differences in Rorschach aggressive imagery or anger directed at the test itself. However, the $F > 16$ patients showed a significantly greater incidence of aggressive behavior across a variety of categories, as noted in the patient's hospital chart. This result

held more for male than for female $F > 16$ patients, although combining male and female $F > 16$ groups also produced consistently significant results. These findings lead to a number of implications.

The patient who obtains a very high elevation on the MMPI F scale appears more likely to act out his aggressive feelings, whether toward his environment (destructive behavior) or toward himself (suicidal gesture or attempt). This finding both extends to a patient population and further elaborates the relationship of F scores and aggression found by Gynther (1961) using a criminal (court referred) and McKegney (1965) using a delinquent population. It amplifies Shipman's (1965) finding of a significant correlation between F scores and physical hostility ratings. In addition, the present results suggest a relationship between elevation of F scores and the possibility of suicidal concerns and/or behavior.

In both Experiments I and II, the evaluated characteristics of the Rorschach failed to differentiate E ($F > 16$) and C (F of 3-12) groups. This finding is in line with that of several experimenters (Jensen, 1957; Scodel & Lipetz, 1957; Lesser, 1958; Buss, Fischer & Simmons, 1962) who fail to find a clear and consistent relationship between overt aggressive behavior and fantasy or projective test (usually TAT) indications of hostility. Towbin's (1959) finding of a significant relationship between hostility directed at the Rorschach test and overt assaultive behavior was not replicated in the present study. It should be noted, however, that the two studies are not necessarily comparable, as the sample selection basis was quite different. Towbin divided his patients according to a history of assaultive or non-assaultive behavior, while the present subjects were divided in terms of MMPI F scale scores.

A further implication is the suggestion of sex differences in the aggressive behavior of $F > 16$ patients. The $F > 16$ male seems more likely to channel felt disturbance into aggressive action, rather than project such feelings into the fantasy situation posed by a projective test. This was borne out in the finding that male $F > 16$

subjects had proportionately more hospital chart notations of aggressive behavior than female $F>16$ subjects. There was a trend (though not significant) for the female data to parallel that of the males, and this in part accounted for the fact that the combined male and female data on aggressive characteristics did reach significance. On the other hand, the mean Rorschach hostility content scores were higher for both E and C female groups than for the male groups, suggesting perhaps a greater reliance by the female on indirect (i.e., fantasy) expression of aggression (see Wyer, Weatherley, & Terrell, 1965).

REFERENCES

- Adams, H. B., Cooper, G. D. & Carrera, R. N. The Rorschach and the MMPI: A concurrent validity study. *Journal of Projective Techniques*, 1963, 27, 23-34.
- Block, J. & Bailey, D. Q-sort item analyses of a number of MMPI scales. Officer Education Research Laboratory, Technical Memorandum, OERL-TM-55-7, May, 1955.
- Brozek, J. & Schiele, B. C. Clinical significance of the Minnesota Multiphasic F scale evaluated in experimental neurosis. *American Journal of Psychiatry*, 1948, 105, 259-266.
- Buss, A. H., Fischer, H., & Simmons, A. J. Aggression and hostility in psychiatric patients. *Journal of Consulting Psychology*, 1962, 26, 84-89.
- Buss, A. H. & Gerjuoy, H. The scaling of terms used to describe personality. *Journal of Consulting Psychology*, 1957, 21, 361-369.
- Cofer, C. N., Chance, June E., & Judson, A. J. A study of malingering on the MMPI. *Journal of Psychology*, 1949, 27, 491-499.
- Dahlstrom, W. G. & Welsh, G. S. *An MMPI Handbook*. Minneapolis: Univ. of Minnesota Press, 1960.
- Edwards, A. L. *Experimental design in psychological research*. New York: Rinehart, 1950.
- Elizur, A. Content analysis of the Rorschach with regard to anxiety and hostility. *Journal of Projective Techniques*, 1949, 13, 247-284.
- Friedman, H. Perceptual regression in schizophrenia: an hypothesis suggested by the use of the Rorschach test. *Journal of Projective Techniques*, 1953, 17, 171-185.
- Gauron, E., Severson, R., & Englehart, R. MMPI F scores and psychiatric diagnosis. *Journal of Consulting Psychology*, 1962, 26, 488.
- Goldfried, M. R. Rorschach developmental level and the MMPI as measures of severity of psychological disturbance. *Journal of Projective Techniques*, 1962, 26, 187-192.
- Gough, H. D. Simulated patterns on the MMPI. *Journal of Abnormal and Social Psychology*, 1947, 42, 215-225.
- Gough, H. D., McKee, M. A., & Yandell, R. J. Adjective check list analyses of a number of psychometric and assessment variables. Officer Education Research Laboratory, Technical Memorandum; OERL-TM-55-10, May, 1955.
- Gynther, M. D. The clinical utility of "invalid" MMPI F scores. *Journal of Consulting Psychology*, 1961, 25, 540-542.
- Gynther, M. D. Crime and psychopathology. *Journal of Abnormal and Social Psychology*, 1962, 64, 378-380.
- Gynther, M. D. & Shimkunas, A. M. More data on MMPI F >16 scores. *Journal of Clinical Psychology*, 1965, 21, 275-277.
- Hathaway, S.R. & Monachesi, E.D. (Eds.) *Analyzing and predicting juvenile delinquency with the MMPI*. Minneapolis: Univ. of Minnesota Press, 1953.
- Hunt, H. F. The effect of deliberate deception on MMPI performance. *Journal of Consulting Psychology*, 1948, 12, 396-402.
- Jensen, A. R. Aggression in fantasy and overt behavior. *Psychological Monographs*, 1957, 71, No. 16.
- Klopfer, B., Ainsworth, Mary D., Klopfer, W.G., & Holt, R. R. *Developments in the Rorschach Technique*. Vol. 1, New York: World Book Company, 1954.
- Klopfer, B. & Davidson, Helen H. *The Rorschach Method of Personality Diagnosis; Individual Record Blank*. New York: World Book Company, 1942.
- Leary, T. *Interpersonal diagnosis of personality*. New York: Ronald Press, 1957.
- Lesser, G. S. Conflict analysis of fantasy aggression. *Journal of Personality*, 1958, 26, 29-41.
- Marks, P. A. & Seeman, W. *The actuarial description of abnormal personality*. Baltimore: Williams & Wilkins, 1963.
- McKegney, F. P. An item analysis of the MMPI F scale in juvenile delinquents. *Journal of Clinical Psychology*, 1965, 21, 201-205.
- Meehl, P. E. & Dahlstrom, W. G. Objective configural rules for discriminating psychotic from neurotic MMPI profiles. *Journal of Consulting Psychology*, 1960, 24, 375-387.
- Meehl, P. E. & Hathaway, S. R. The K factor as a suppressor variable in the MMPI. In Welsh, G. S. & Dahlstrom, W. G. (Eds.) *Basic readings on the MMPI in psychology and medicine*. Minneapolis: Univ. of Minnesota Press, 1956.
- Schneck, J. M. Clinical evaluation of the F scale on the MMPI. *American Journal of Psychiatry*, 1948, 104, 440-442.
- Schultz, S. D. A differentiation of several forms of hostility by scales empirically constructed from significant items on the MMPI. *Dissertation Abstracts*, 1955, 17, 717-720.

- Scodel, A. & Lipetz, M. E. TAT hostility and psychopathology. *Journal of Projective Techniques*, 1957, 21, 161-165.
- Shipman, W. G. The validity of MMPI hostility scales. *Journal of Clinical Psychology*, 1965, 21, 186-190.
- Towbin, A. P. Hostility in Rorschach content and overt aggressive behavior. *Journal of Abnormal and Social Psychology*, 1959, 58, 312-316.
- Wiener, D. N. Subtle and obvious keys for the MMPI. *Journal of Consulting Psychology*, 1948, 12, 164-170.
- Wyer, R. S., Jr., Weatherley, D. A. & Terrell, G. Social role aggression, and academic achievement. *Journal of Personality and Social Psychology*, 1965, 1, 645-649.

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Extraversion, Neuroticism, and Scores on the Holtzman Inkblot Technique¹

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Summary: The Extraversion (E) and Neuroticism (N) scales of the Maudsley Personality Inventory (MPI) were correlated with the 21 scores of the Holtzman Inkblot Technique (HIT). None of the correlations between the E scale and HIT were significant but 6 of the correlations of the N scale and the HIT were statistically significant. The pattern of significant correlations supported the construct validity of the N scale.

The scores were factor analyzed. The rotated loadings of the first five factors were strikingly similar to those obtained in analyses of the individual HIT. The E scale had its highest loading on a sixth factor, further indicating its relative independence. The N scale had its highest loading on the HIT factor reflecting psychopathology.

The purpose of this study was to investigate the relation of the Maudsley Personality Inventory (MPI) Extraversion (E) and Neuroticism (N) scales with scores on the Holtzman Inkblot Technique (HIT).

Since the original publication of *Psychodiagnostics* (Rorschach, 1942), extraversion-introversion and neuroticism have been among the major personality constructs which clinicians have attempted to assess with inkblot techniques. Factor analyses by Cox (1951) and Sen (1950) of Rorschach variables and external criteria of neurosis both yielded a factor which could be identified as neuroticism, and Eysenck (1965) has suggested that two of the five basic HIT factors found by Holtzman, Thorpe, Swartz, and Heron (1961) could be identified as neuroticism and extraversion-introversion. It therefore seemed appropriate to determine the relation, if any, of neuroticism and extraversion-introversion to scores on the HIT.

Method

The Maudsley Personality Inventory (Eysenck, 1959) E and N scales were chosen as the measures of extraversion-introversion and neuroticism, respectively. Since both of these scales were derived using factor analytic methods, they are well suited for inclusion in a factor analytic study; moreover, both have been subjected to a number of studies of construct validity.

Form B of the HIT was administered to 89 subjects (40 women and 49 men) enrolled in undergraduate anthropology classes at the University of Texas using the standard group administration procedures (Swartz & Holtzman, 1963). The MPI was administered after the HIT, following the procedures outlined to the *MPI Manual* (Knapp, 1962). Both tests were scored on all the standard scales and, as usual, the HIT Form Definiteness (FD), Form Appropriateness (FA) and Pathognomic Verbalization (V) Scores were prorated to correct for any differences in Rejection (R). The 2 MPI scores and the 21 HIT scores were then intercorrelated.

Four HIT scales, Anatomy, Sex, Abstract and Balance, were found to be infrequent and highly skewed with standard deviations in excess of the means. These four variables therefore were deleted from the factor analysis.

The correlation matrix of the remaining 19 MPI and HIT scores was then factor analyzed using a principal axis solution with unities placed in the diagonals. Factoring stopped when eigen values dropped below unity. The resulting factors

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were then rotated using the normalized varimax method. Two additional graphic hand rotations were performed to match as closely as possible the HIT factorial structure typically found by Holtzman et al. (1961).

Results and Discussion

The correlations of the MPI *E* and *N* scales with the 21 HIT scores are presented in Table 1. On the basis of Rorschach's (1942) discussion of the extratensive and introverted experience types, it would be expected that a scale of extraversion would correlate positively with the HIT Color (*C*) score and negatively with the HIT Movement (*M*) score. A positive correlation with the Human score also would be consistent with inkblot lore. Not only were all the correlations between the *E*

scale and the HIT scores insignificant, but also the correlations with the *M* and *C* scores were in the opposite direction from that expected. Thus, there appeared to be no relation between extraversion-introversion as measured by the MPI and the HIT.

The correlations of the HIT and the MPI Neuroticism scale, on the other hand, were not only significant but quite consistent with the pattern which would be expected. There were significant negative correlations with the HIT Rejection (*R*) and Form Appropriateness (*FA*) scores, and significant positive correlations with the Movement (*M*), Pathognomic Verbalization (*V*), Anxiety (*Ax*), and Hostility (*Hs*) scores. Poor form level (low *FA*) and deviant verbalization (*V*) should both be associated with disturbance, as should ele-

Table 1
Correlations of HIT Variables with
MPI *E* and *N* Scales

	<i>E</i>	<i>N</i>
Rejection (<i>R</i>)	-.08	-.24*
Location (<i>L</i>)	.12	-.18
Space (<i>S</i>)	.17	-.09
Form Definiteness (<i>FD</i>)	.13	.07
Form Appropriateness (<i>FA</i>)	.07	-.23*
Color (<i>C</i>)	-.10	.17
Shading (<i>Sh</i>)	-.02	.04
Movement (<i>M</i>)	.11	.23*
Pathognomic Verbalization (<i>V</i>)	-.01	.23*
Integration (<i>I</i>)	.05	.05
Human (<i>H</i>)	.01	.15
Animal (<i>A</i>)	.10	.14
Anatomy (<i>At</i>)	.15	-.02
Sex (<i>Sx</i>)	.13	.07
Abstract (<i>Ab</i>)	-.11	.16
Anxiety (<i>Ax</i>)	.02	.31**
Hostility (<i>Hs</i>)	.11	.24*
Barrier (<i>Br</i>)	-.02	.17
Penetration (<i>Pn</i>)	.01	.09
Balance (<i>B</i>)	.02	.03
Popular (<i>P</i>)	.16	.04

* $r_{.05} = .21$

** $r_{.01} = .27$

Table 2
Rotated Factor Loadings

Variable	I	II	III	IV	V	VI	h ²
MPI Extraversion	.23	-.15	.08	.41	-.25	.44	51.39
MPI Neuroticism	-.02	.17	.49	.06	-.17	-.27	37.02
Rejection	-.09	-.27	-.20	-.13	<u>.70</u>	.13	63.81
Location	-.24	-.08	-.39	<u>.75</u>	-.02	-.03	78.36
Space	-.10	-.01	-.05	<u>.78</u>	.08	.04	63.68
Form							
Definiteness	<u>.62</u>	-.01	-.12	.08	-.46	-.22	66.35
Form							
Appropriateness	-.15	-.13	-.23	<u>.42</u>	.56	.35	71.25
Color	.05	<u>.79</u>	.19	-.20	-.07	-.09	71.96
Shading	.09	<u>.87</u>	-.05	.03	.03	.07	76.93
Movement	<u>.68</u>	.04	.52	-.28	-.06	-.03	81.48
Pathognomic							
Verbalization	.21	-.06	<u>.68</u>	-.35	-.24	-.04	69.18
Integration	<u>.66</u>	-.07	.13	-.29	.20	.25	64.90
Human	<u>.77</u>	.00	.20	-.03	-.06	-.44	81.87
Animal	<u>.09</u>	.03	.02	-.20	<u>-.72</u>	.45	78.37
Anxiety	.01	.04	<u>.87</u>	-.06	<u>.05</u>	.01	76.86
Hostility	.33	.01	<u>.81</u>	-.13	.05	.17	81.77
Barrier	<u>.31</u>	.03	.11	-.19	-.37	-.46	48.09
Penetration	.05	.09	.44	-.47	-.10	.36	57.40
Popular	<u>.65</u>	.18	.03	.12	.23	.38	65.46
% Total Variance	11.19	8.30	15.58	11.61	7.60	13.42	

Note: Factors numbered to correspond to typical HIT factors.
Variables defining HIT factors underscored.

vated *Ax* and *Hs* scores. The positive correlation with Movement was consistent with a picture of the neurotic as a person turned inward upon himself, while the negative correlation with number of rejections indicated the conformity associated with neuroses.

The factor analysis was undertaken to determine if any of the typical HIT factors could be identified as introversion-extraversion or neuroticism factors as Eysenck (1965) had suggested. Six factors emerged from the analysis. After rotations, five were readily identifiable as the factors typically found in analyses of the HIT (Holtzman et al., 1961; Megargee, 1965). The sixth factor was not readily interpretable, having no loadings over .46

despite the fact that the placing of unities in the diagonals should maximize factor loadings. The rotated factor loadings are presented in Table 2. Factors have been numbered to correspond with those described by Holtzman et al. (1961) and the variables defining each factor are indicated.

The MPI *E* scale had its highest loading (.44) on Factor VI. In factor analyses of the HIT alone, the sixth factor typically contains only those common HIT elements not accounted for by the first five factors (Holtzman et al., 1961). The fact that *E* had its highest loading on this factor in the present analysis indicated that it was relatively independent of the HIT, a finding consistent with the absence

of any significant first order correlations.

E had its second highest loading (.41) on HIT Factor IV, which has been described as a bipolar factor, "...with positive loadings designed to measure differentiated responses having adequate form level and with negative loadings on scores that reflect immaturity, bodily preoccupations, or disturbed thought processes." (Holtzman et al., 1961, p. 162). The rather cautious, conventional, approach reflected by this factor is, perhaps, not too dissimilar from the pattern which might be expected of the stereotyped extravert in U. S. society.

The MPI *N* scale had its principal loading (.49) on Factor III. This factor reflects disordered thought processes and emotional disturbance (Holtzman et al., 1961). This loading can be taken as further evidence for the construct validity of the *N* scale. While an extremely high loading (.70 or .80 or higher) would be suspect, since Factor III is probably more closely related to psychoticism than neuroticism, it is appropriate that a neuroticism scale should have a loading of this magnitude on this factor.

It is noteworthy that *N* loaded only .17 on Factor II which is defined by Color and Shading. In previous factor analyses of the Rorschach and external criteria of neuroticism, both Cox (1951) and Sen (1950) obtained "neuroticism" factors which were characterized by high shading and color loadings. In view of the many differences between the Rorschach and the HIT, as well as the differences between the criteria of neuroticism used by Cox and Sen and the present investigators, it is not surprising that a different pattern of relationships should emerge. Nevertheless these data indicate that inkblot color and shading scores are not invariably associated with neuroticism.

The striking correspondence between

the present factor analysis of the Group Form of the HIT and the results typically obtained with the individual form should also be pointed out. This close resemblance further indicated the similarity of the results obtained with the Group and Individual forms of the HIT noted by Swartz and Holtzman (1963).

REFERENCES

- Cox, Shelagh M. A factorial study of the Rorschach responses of normal and maladjusted boys. *Journal of Genetic Psychology*, 1951, 79, 95-115.
- Eysenck, H. J. *The Maudsley Personality Inventory*. London: University of London Press, 1959.
- Eysenck, H. J. Review of the Holtzman Inkblot Technique. In Buros, O. K. (Ed.) *The sixth mental measurements yearbook*. Highland Park, N. J.: The Gryphon Press, 1965, 440-441.
- Holtzman, W. H., Thorpe, J. S., Swartz, J. D., & Herron, E. W. *Inkblot perception and personality*. Austin: University of Texas Press, 1961.
- Knapp, R. R. *Manual for the Maudsley Personality Inventory*. San Diego: Educational and Industrial Testing Service, 1962.
- Megargee, E. I. The performance of juvenile delinquents on the Holtzman Inkblot Technique: a normative study. *Journal of Projective Techniques and Personality Assessment*, 1965, 29, 504-512.
- Rorschach, H. (Trans. by P. Lemkau & B. Kronenbourg.) *Psychodiagnostics: a diagnostic test based on perception*. Berne: Huber, 1942.
- Sen, Amya. A statistical study of the Rorschach Test. *British Journal of Psychology: Statistical Section*, 1950, 3, 21-39.
- Swartz, J. D. & Holtzman, W. H. Group method of administration for the Holtzman Inkblot Technique. *Journal of Clinical Psychology*, 1963, 19, 433-441.
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"The Rotter Incomplete Sentences Blank Adjustment Score As An Indicator of Somatic Complaint Frequency"

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In order to further assess the validity of the Rotter Incomplete Sentences Blank (ISB), frequency of physical complaints was chosen as a more indirect criterion than typically used in previous validation studies which found relationships between the ISB and adjustment ratings (Rotter, Rafferty, & Schachtitz, 1949; Rotter, Rafferty, & Lotsof, 1954; Morton, 1955), referral for psychological treatment (Churchill and Crandall, 1955) and sociometric choice (Rotter, Rafferty, and Lotsof, 1954). It was hypothesized that adjusted Ss will use an equally available medical facility less often than maladjusted Ss over a standard period of time.

College sophomores (37 females and 18 males) were group administered the ISB, College Form, which was scored for adjustment according to the manual (Rotter & Rafferty, 1950). The physical complaint measure was a count of Infirmary visits over the same four-semester period. Ss falling below the median on the ISB (102-142) comprised the adjusted group. Those who scored above the median (144-166) were called maladjusted. Using the Mann-Whitney U test, it was found that maladjusted Ss utilized the college medical facility significantly more often than adjusted Ss (6.67 vs 2.68 Infirmary visits, $Z = 2.98$, $p = .001$). Sex differences appeared in the maladjusted group where the male Infirmary visit count of 8.90 was higher ($p < .05$, two-tailed) than that of the females (5.35).

The findings increase confidence in the ISB as a measure of adjustment and suggests that the method can be used to identify individuals who are likely to seek medical attention. Sex differences in the maladjusted group may be due to dependency needs being more conflict-producing for adult males in our culture (Kagan & Moss, 1962), resulting in more maladjusted males using the Infirmary as a socially acceptable, though neurotic, source of nurturance.

REFERENCES

- Churchill, Ruth & Crandall, V.J. The reliability and validity of the Rotter Incomplete Sentences Test. *Journal of Consulting Psychology*, 1955, 19, 345-350.
- Kagan, J. & Moss, H.A. *Birth to maturity*. New York: Wiley, 1962.
- Morton, R.B. An experiment in brief psychotherapy. *Psychological Monographs*, 1955, 89, 1-17.
- Rotter, J.B. & Rafferty, Janet E. *Manual: The Rotter Incomplete Sentences Blank*, New York: Psychological Corp., 1950.
- Rotter, J.B., Rafferty, Janet E., & Lotsof, A.B. The validity of the Rotter Incomplete Sentence Blank: high school form. *Journal of Consulting Psychology*, 1954, 18, 105-111.
- Rotter, J.B., Rafferty, Janet E., Schachtitz, Eva. Validation of the Rotter Incomplete Sentences Blank for college screening. *Journal of Consulting Psychology*, 1949, 13, 348-356.

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Extension of Personal Time in TAT and Story Completion Stories¹

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Summary: In Study I, 42 Ss responded to a variety of TAT and Story Completion (SC) stimulus cues. Eight sets of cues were constructed by empirically matching personal time scores. Study II, using these 8 sets, compared the reliability, stability, and magnitude of extension and its components under varying conditions of stimulus cue, order of presentation, and structure of the TAT administration, in a test-retest design with an interval of a week. The Ss were 160 men and women whose stories were scored reliably by independent observers. Results supported the bi-directional (past-future) and cognitive-empirical distinctions. Empirical protension emerged as a quite stable variable that is the most important root common to both the SC and TAT methods. Later order and structured TAT administration tended to lengthen retension and protension scores.

A central function of the psychoanalytic conception of the ego is to develop the capacity to fantasy about, to plan for, and to implement suitable delays of reward (Murray, 1959; Wallace & Rabin, 1960; Mischel, 1961). Prior research in this area has produced a variety of significant relationships that have been theoretically suggestive, though not always consistent (Wohlford, 1965). Part of the ambiguity of this research seems due to the use of nebulous concepts and highly diversified methods (Wallace & Rabin, 1960, p. 231).

A recent review (Wohlford, 1965) suggested the following concepts: An individual's *personal time* is the total array of his cognitions which have referents in the past or future. The past-future distinction determines *temporal direction*. The length of the time span encompassed by a cognition is its *extension*. Extension into the future is *protension*. Extension into the past is *retension*.

In one method that is commonly used to assess extension of personal time, fantasy stories are scored for the length of time covered by the stories' actions, on the theory that the individual's own ex-

tension of personal time is reflected in his fantasy behavior (LeShan, 1952; Wallace & Rabin, 1960; Epley & Ricks, 1963; Kahn, 1967). Fantasy story measures of extension were positively correlated with, or were significantly related to increasing age during childhood (Wohlford, 1965), to social class (LeShan, 1952), to family stability (Graves, 1962), to high academic achievement (Epley & Ricks, 1963), to the absence of psychopathology (Wallace, 1956) and of juvenile delinquency (Barndt & Johnson, 1955; Davids, Kidder, & Reich, 1962), and to improvement in successfully treated juvenile delinquency (Ricks, Umbarger, & Mack, 1964). In short, there is growing empirical support for the construct of extension of personal time.

However, the use of highly diversified methods often makes it difficult to evaluate results. Studies using young children as subjects generally employ Story Completion (SC) beginnings as stimulus cues, while studies using adults as subjects generally rely upon TAT cards as stimulus cues. Even when two studies both use either the TAT or the SC, the results may not be comparable with one another, as studies often use different kinds of stimulus cues, numbers of stimulus cues, orders of administration, instructional approaches, and allotted times to tell or write the stories. In short, the problem of noncomparability of TAT research in general (Murstein, 1963, p. 58) is found in the measurement of extension of personal time in fantasy stories. If indeed stories told in response to SC and TAT cues had extension scores which were functionally equivalent, as WISC and

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WAIS I.Q. scores appear to be (Ross & Morledge, 1967), then it would be possible to generalize from one study to another to enlarge our understanding of personal time phenomena.

In addition, interjudge reliability and test-retest reliability, also studied under highly diversified methods, should be considered. With children as subjects, the SC as stimulus cue, and the Barndt & Johnson (1955) scoring system, interjudge reliability has been reported as high as unity (Davids & Parenti, 1958). With adults as subjects, the TAT as the stimulus cue, and the Epley and Ricks (1963) scoring system, the interjudge reliabilities of .66 to .79 (Epley & Ricks, 1963; Wohlford, 1966), while appreciably lower, maintained a respectably objective basis. Studies which purchase extremely high interjudge agreement (Davids & Parenti, 1958), do so at the cost of sacrificing either the subtlety of the story telling task for subsequent stories by the use of follow-up questions about the story's extension, or limiting the test to only one story per *S*. In the present study, no such follow-up questions were used; interjudge agreement was reached by having independent judges score the written stories. This procedure made it possible to maintain the *Ss'* naivete in a test-retest design and also to use the group administration.

In studying the inter-test reliabilities of children's SC extension scores, Davids and Parenti (1958) found correlations among the extension scores of individual stories administered in a single testing of from .66 to .93. Epley and Ricks (1963), studying adults' TAT extension, reported inter-test reliabilities of only .46 for protension and .33 for retension. Their two tests were given a year apart, by different examiners, and with different types of pictures, so they concluded that even these relatively low reliabilities justify some belief in the stability of individual extension variables (Murray, 1963, p. 52). In summary, the available evidence about the SC and the TAT methods of measuring extension is rather inconclusive regarding each method's formal test characteristics.

Regardless of the outcome of a SC - TAT comparison, if high interjudge and test-retest reliabilities can be demonstrated

for either the SC or the TAT, the status of extension of personal time as a stable personality disposition would be supported. To control for possible effects from the order of presentation, especially under group administration (Atkinson, 1958), half the *Ss* received the SC first, followed by the TAT, and the other *Ss* received the TAT first, followed by the SC. Furthermore, the TAT administration was systematically varied to study the influence of instructional set. Half of each group received the TAT administration that was unstructured like the SC administration. The others received the relatively more structured TAT administration recommended by Atkinson (1958).

A secondary purpose was to begin the classification and measurement of aspects of protension and retension scores that might have more use than the present unrefined variables. Murray (1959) discriminated three aspects of planning for future action: prospection, or the fantasy of impulse gratification; orientation, or the selection of a goal; and ordination, or the step-by-step strategy to attain the goal. During prospection, which are preliminary processes of imagination, "the subject is concerned with the future, prospectively picturing himself in this and that situation, seeking this or that opportunity for gratification or for the advancement of his ambitions" (Murray, 1959, p. 35). These fantasies and trial experiments in the mind precede the *S's* orientation which Murray defines as "the selection from numerous alternatives of a concrete and specific goal, purpose, or aim to appease one or more needful dispositions" (Murray, 1959, p. 36). Finally, ordination is "the selection and temporal articulation of ways-means, strategies, or tactics" (Murray, 1959, p. 36).

According to Murray's theory, one might expect that one single fantasy story might have at least two protension values. The first, at the level of prospection, is a purely imaginal or *cognitive* expression of a needful disposition that seeks gratification (e.g., "the little boy wishes to be a concert violinist"). The other protension value, at the level of ordination, is a step-by-step strategy to attain a goal represented by the character's concrete or *em-*

pirical action (e.g., "the little boy practices his violin everyday to prepare for the Spring Music Contest"). The binary distinction of cognitive-empirical may be applied to the past as well as the future of a fantasy story.

In summary, the purpose of the present investigation was to study extension of personal time in a test-retest design, as influenced by three independent variables, namely, stimulus cue (SC or TAT), the TAT instructions (structured or unstructured), and the order of presentation (SC-TAT or TAT-SC). All *Ss* were to receive sets of both the SC and the TAT in each of two test sessions. Therefore, two sets of each stimulus cue had to be devised which themselves were equivalent forms of the test. The purpose of Study I was to construct these sets on the empirical basis of the stimulus cues' power to discriminate individual differences in extension and the cues' relative values. Study II was to examine the three independent variables, employing the sets of cues derived in Study I.

Study I

Method

The *Ss* were 22 male and 20 female undergraduates recruited from an introductory psychology course.

Theoretical considerations (Wohlford, 1965), previous reports (Murstein, 1963), and pilot work, suggested that stories told in response to stimulus cues with figures of the same sex as the *S's* would provide a more accurate and valid discrimination of extension values than stories about figures of the opposite sex. Thus, the male *Ss* were presented with cues having primarily male figures; and female *Ss*, with primarily female figures. Female *Ss* received the following TAT stimulus cues: TAT 1, 2, 7GF, 8GF, 13GF, 14, 16, 17GF, Symonds A5 and part of Symonds B4 (omitting angry girl at right). Male *Ss* received the following TAT stimulus cues: TAT 1, 2, 6BM, 7BM, 13B, 13MF (omitting the girl in bed), 16, Symonds A1, and Symonds A7. SC stimulus cues, used in earlier studies (Barndt & Johnson, 1955; Graves, 1962) were the basis of our male and four female cues.

All stories from all *Ss* were scored according to the Epley and Ricks (1963) scoring system for retension, protension, and overall extension.

Results

The male and female data were analyzed separately, but the results are combined in this summary report. The mean stimulus cue values ranged from 0.5 to 4.1 for retension, from 2.9 to 6.5 for protension, and from 3.6 to 7.4 for extension. An item analysis of each stimulus cue was performed to determine which cues best discriminated protension among *Ss*. All protension scores for all *Ss* were used to rank each *S's* protension as long or short. Then, each *S's* protension value, relative to the other *Ss'* values for that cue, was compared with his overall protension. The percentage of correct discriminations of the stimulus cues ranged from 67 to 95 per cent.

The final sets of cues on three bases: the cue's power to discriminate protension; the comparability of stimulus cue figures' ages and sex; and the comparability of the cues' protension, retension and extension values. All cues in the final sets had correctly discriminated 75 per cent or more of the *Ss* on protension. The male TAT cues in Set X were TAT 1, TAT 2, TAT 6BM, and TAT 7BM; and in Set Y were TAT 13B, TAT 13MF (omitting the girl in bed), Symonds A7, and Symonds A1. The female TAT cues in Set X were TAT 1, TAT 2, TAT 7GF, and TAT 13G; and in Set Y were TAT 17GF, TAT 8GF, Symonds B4 (omitting the angry girl), and Symonds A5. The TAT cues of Set X are highly similar, though not identical, to the TAT cues of Set Y for the men and for the women. (The complete description of the eight sets of stimulus cues, including the comparisons of the TAT sets and the exact wording of the SC sets, is found in the same sources as are mentioned in footnote 2.) Also, effort was given to match the male TAT cues with their female counterparts, but such effort was secondary to the within sex matching of two equivalent sets of cues.

The task of matching the SC cues was much simpler. Three cues correctly dis-

Table 1
Design of Study II

Subjects	Order of Presentation	Cues		TAT Administration
		Session I	Session II	
20 men 19 women	TAT, SC	X	Y	Structured
21 men 21 women	TAT, SC	X	Y	Unstructured
20 men 19 women	SC, TAT	Y	X	Structured
21 men 19 women	SC, TAT	Y	X	Unstructured

criminated 75 per cent or more of the male Ss; these were: 1. "About three o'clock one bright sunny afternoon in May, two boys were walking along a street near the edge of town..." 2. "Ten o'clock one morning Gary met his friend John near the center of town..." 3. "Bruce is having a cup of coffee in a restaurant. He's thinking of the time to come when..." These cues were rendered into equivalent forms within sex and between sex by changing a few words, e.g., "two boys" to "two girls" (see footnote 2). In each of the four sets of SC cues, the first cue had short protension, and the second and third cues had long protension.

In sum, the X and Y sets for each sex and for each type of stimulus cue were constructed to be highly similar both in their formal cue properties and in their empirically established cue values for protension. How successful this endeavor was is reflected in the cross-validated aspect of Study II.

Study II

Method

Subjects and procedure. A new sample of 82 male and 78 female undergraduates was recruited from an introductory psychology course. The men and women were tested separately in groups of 10 to

20. Each S was randomly assigned to one of four conditions in a 2 x 2 matrix of Order of Presentation and TAT Administration (see Table 1). All Ss received both the SC and the TAT in both test sessions. Half received the SC first, and the other half received the TAT first. Half of each group received the Structured Administration (SA) of the and the other halves received the Unstructured Administration (UA) of the TAT. Approximately one week after Session I, the Ss were retested under exactly the same conditions (Order of Presentation and TAT Administration), except that the alternate sets of stimulus cues were used.

The SA condition of the TAT followed Atkinson's (1958) recommendations. The UA condition of the TAT was identical to the SA, except that (a) the minute-by-minute urgings were omitted, (b) the four questions were printed together at the top of the page, instead of spaced over the whole page, and (c) the four questions were preceded by, "Be sure to include answers to the following questions in your story." The SC administration was identical to the UA of the TAT, except that Atkinson's statement 2, regarding the past, and the statement in (c) above were omitted.

Protension, retrotension, and extension scores.² Each fantasy story yielded a total of six scores, three Cognitive (C) scores

² A 13-page manual, instructing the use of the expanded Epley and Ricks system, has been deposited with the American Documentation

and three Empirical (E) scores. Cognitive scores were based on anticipated, probable, intended, ruled out, or implied action (e.g., "the little boy wishes to be a concert violinist"). Empirical scores were based on sequences of direct, explicit action (e.g., "the little boy will practice his violin everyday to prepare for the Spring Music Contest"). Each story was scored on the same 11-point scale (0 to 10) for Cognitive Retention (RetC), for Empirical Retention (RetE), for Empirical Protension (ProE), and for Cognitive Protension (ProC). Cognitive Extension (ExtC) and Empirical Extension (ExtE), as the sums of the respective retention and protension scores, varied along a 21-point scale (0 to 20).

Results

Interjudge agreement. Two independent judges scored all extension variables from all stories of 160 Ss. Sixty-four interjudge reliability correlation coefficients were determined separately from the matrix of sex, SA-UA, SC-TAT, C-E, Ret-Pro, and Session I or II. Of these 64 correlations 58 were .70 or better, and 41 of these were .80 or better. Table 2 sum-

marizes the initial interjudge reliability correlations across orders and across sessions. Within a general pattern of objectivity, there were some variations in the reliability of the extension scores. The TAT was scored more reliably than SC ($X^2 = 5.40$, $p < .05$ 2-tailed test), and the Pro was more reliably scored than the Ret ($X^2 = 21.02$, $p < .001$, 2-tailed test). Other factors, such as sex, E vs. C, and SA vs. UA, did not significantly influence the interjudge reliabilities.

In cells failing to attain a coefficient of .70 or better, stories were scored by a third judge. The two most comparable scores were averaged and used in the subsequent analyses.

Protension, retention, and extension scores from stimulus cue sets X and Y. Individual Ss' mean protension and retention scores varied from 0.00 to 8.75; individuals' mean extension scores varied from 1.00 to 15.25. The 16 TAT group scores, taking separately men-women, C-E, Ret-Pro, and sets X-Y, ranged from 2.98 to 4.99. (The 48 mean scores are included in the same sources as are mentioned in footnote 2.) The 16 counter-

Table 2
Initial Interjudge Reliability Coefficients

Stimulus Cue	Structure of Administration	Sex	N	Retention		Protension	
				Cognitive	Empirical	Empirical	Cognitive
TAT	SA	Men	40	.85	.81	.92	.88
		Women	38	.80	.82	.94	.87
TAT	UA	Men	42	.61	.80	.86	.88
		Women	40	.81	.80	.94	.91
SC	(UA)	Men	82	.77	.75	.70	.75
		Women	78	.70	.74	.85	.87

Note: Orders 1 and 2 and Sessions 1 and 2 have been combined.

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part SC scores ranged from 1.64 to 4.46. The TAT Ext scores and the SC Ext scores ranged from 6.55 to 9.63, and from 4.13 to 8.39, respectively. Pro and Ret *SD*'s ranged from 1.20 to 2.09, and Ext *SD*'s ranged from 1.98 to 3.16. The effort to match Sets X and Y was successful except

in the cases of SC ProC and ExtC for both men and women, in which sets Y were greater than sets X. Matching across sexes and across cues also achieved quite comparable means. In short, highly comparable, but nonidentical sets of cues were derived in order to discriminate among individuals' protension values with sensitivity and precision.

Within test comparisons. As seen in Table 3, the within test correlations of TAT Pro and Ret were .82 and .83, accounting for about 65% of the variance, while the SC Pro within test r of .48 accounted for less than a quarter of the variance. The high r of SC Ret of .83

was probably artifactual, as the SC task is future-oriented. The correlations between TAT Ret and Pro were statistically significant, but account for little of the variance. These correlations were comparable to earlier reported correlations between these variables (Epley and Ricks, 1963; Wohlford, 1966). The correlations between SC Ret and Pro were close to zero and non-significant, as expected from the make-up of the test.

Inter-test (test-retest) reliability. Table 4 gives the independent inter-test reliability correlation coefficients, corrected by the Spearman-Brown formula, for Ret and Pro between Session I and II.

Table 3

Within Test Correlations: Between Ret and Pro, and Between C and E

Variables	TAT	SC
Ret C and Ret E	.83**	.83**
Pro C and Pro E	.82**	.48**
Ret E and Pro E	.35**	.04
Ret C and Pro C	.27*	.13

* $p < .001$

** $p < .0001$

Note: $N = 160$; 2 tailed tests

Table 4

Intertest Reliability Coefficients between Sessions I and II^a

Stimulus Cue	Structure of Administration	Sex	N	Retrotension		Protension	
				Cognitive	Empirical	Empirical	Cognitive
TAT	SA	Men	40	.65***	.56**	.72***	.55**
		Women	38	.56**	.56**	.63***	.52**
TAT	UA	Men	42	.19	.10	.36*	.15
		Women	40	.54**	.53**	.64***	.57***
SC	(UA)	Men	82	.30*	.30*	.49***	.12
		Women	78	.34*	.12	.56***	-.08

* $p < .01$

** $p < .001$

*** $p < .0001$

^a Corrected by the Spearman-Brown formula; Orders 1 and 2 have been combined.

Table 5
Canonical Correlation Between Session I and Session II

Test	Variable	Univariate <i>F</i> Tests		Multivariate <i>F</i> Tests ^a			
		<i>F</i> (8,144)	<i>p</i> less than	Test of Roots	<i>F</i>	<i>df</i>	<i>p</i> less than
Session I	TAT RetC	3.071	.003	1 thru 8	2.172	64	.001
	TAT RetE	4.107	.001				
	TAT ProE	5.415	.001				
	TAT ProC	2.945	.004				
	SC RetC	1.590	.133				
	SC RetE	1.061	.394				
	SC ProE	5.564	.001				
	SC ProC	1.346	.225				
Session II	TAT RetC	3.482	.001	2 thru 8	1.300	49	.086
	TAT RetE	2.682	.009				
	TAT ProE	7.171	.001				
	TAT ProC	4.909	.001				
	SC RetC	1.412	.196				
	SC RetE	1.678	.100				
	SC ProE	4.720	.001				
	SC ProC	1.756	.090				

^a Tests of significance using Wilks Lambda criterion.

With the TAT as the stimulus cue, the correlations of the four extension variables under SA for both men and women, and under UA for women, ranged from .52 to .72, accounting for more than a quarter of the variance. With the SC as the stimulus cue, the correlation of only ProE accounts for about a quarter of the variance.

A multivariate analysis of covariance technique was used to determine the canonical correlations between the variables in Session I and the variables in Session II. The results are given in Table 5. There was one significant root between the two sessions; ProE had high positive loadings on both the TAT and SC in Session I, and retained them in Session II, with the addition of RetC. ProC had a moderate nega-

tive or zero loading on the first root. The second root failed to reach significance; however, it appeared to be weighted in the past, but only inconsistently so.

SC - TAT comparisons. A multivariate analysis of covariance technique was used to determine the canonical correlations between the TAT and SC variables of Ret, Pro, and Ext. The top half of Table 6 presents the Ret and Pro variables. The first significant root in both the TAT and the SC was loaded heavily on the ProE variable. The second and last significant root was divided between the RetE I and II and the ProC I and II variables, in a somewhat inconsistent fashion. In both the TAT and SC, three of the four variables had a rather

Table 6
Canonical Correlations Between TAT and SC

Test		Univariate <i>F</i> Tests ^a		Multivariate <i>F</i> Tests ^b			
	Variable	<i>F</i> (4,148)	<i>p</i> less than	Test of Roots	<i>F</i>	<i>df</i>	<i>p</i> less than
Ret				Pro			
TAT	RetC I	1.830	0.076	1 thru 8	1.894	64	.001
	RetE I	2.926	0.005				
	ProE I	3.809	0.001				
	ProC I	2.650	0.010				
	RetC II	1.727	0.097				
	RetE II	1.880	0.067				
	ProE II	4.561	0.001				
	ProC III	3.304	0.002				
SC	RetC I	1.980	0.053	2 thru 8	1.540	49	.012
	RetE I	1.766	0.088	3 thru 8	1.328	36	.098
	ProE I	4.427	0.001				
	ProC I	1.758	0.090				
	RetC II	1.807	0.080				
	RetE II	1.667	0.111				
	ProE II	3.318	0.002				
	ProC II	2.279	0.025				
Ext							
TAT	ExtE I	6.259	0.001	1 thru 4	2.688	16	.001
	ExtC I	3.736	0.006				
	ExtE II	4.651	0.001				
	ExtC II	5.241	0.001				
SC	ExtE I	4.723	0.001	2 thru 4	1.355	9	.207
	ExtC I	1.377	0.245				
	ExtE II	4.035	0.004				
	ExtC II	3.450	0.010				

^a Univariate *F*'s for Ret and Pro, *df* = 8,144; univariate *F*'s for Ext, *df* = 4,148.

^b Tests of significance using Wilks Lambda Criterion.

high positive loading, but the fourth variable had a negative loading. The present data did not permit an explanation for this inconsistency.

The Ext variables, presented in the bottom half of Table 6, had to be examined separately, as Ext was not independent of the Ret and Pro. The canonical correlation yielded one significant variable, which was loaded primarily on ExtE I.

Effects of administration, order, sex and interactions. Table 7 reports the results of the univariate and multivariate analyses of variance of TAT Ret and Pro. In all eight comparisons of the structured and unstructured TAT administration, the

SA (structured) condition had longer scores than the unstructured (UA) condition. Four of the univariate F tests and the multivariate F test were significant. The effect was especially prominent in the ProE. In all eight comparisons of first and second order of presentation, the TAT's which followed the SC's had longer scores than those that preceded the SC's. However, only the four Ret univariate F tests reached statistical significance. Although different stimuli were used for men and women, the sex differences were also examined. Where differences existed, men tended to have longer Pro.

Of the TAT Ret and Pro interactions

Table 7
Analyses of Variance of TAT Ret and Pro

Factor	Variable	Univariate F Tests		Multivariate F Tests ^a	
		F (1,152)	p less than	F (8,145)	p less than
Administration (A)	RetC I	0.198	.657	6.229	.001
	RetE I	4.348	.039		
	ProE I	17.114	.001		
	ProC I	3.925	.049		
	RetC II	0.002	.961		
	RetE II	1.263	.263		
	ProE II	14.701	.001		
	ProC II	0.497	.482		
Order (O)	RetC I	9.914	.002	1.909	.063
	RetE I	5.474	.021		
	ProE I	0.017	.896		
	ProC I	0.466	.496		
	RetC II	5.478	.021		
	RetE II	6.640	.011		
	ProE II	0.032	.857		
	ProC II	0.530	.468		
Sex (S)	RetC I	1.079	.301	2.175	.033
	RetE I	0.003	.956		
	ProE I	9.003	.003		
	ProC I	3.756	.054		
	RetC II	0.474	.492		
	RetE II	0.026	.872		
	ProE II	3.180	.077		
	ProC II	0.786	.377		

Table 7 (cont.)

Factor	Variable	Univariate <i>F</i> Tests		Multivariate <i>F</i> Tests	
		<i>F</i> (1,152)	<i>p</i> less than	<i>F</i> (8,145)	<i>p</i> less than
A X O	RetC I	1.091	.298	0.828	.579
	RetE I	0.680	.411		
	ProE I	4.843	.029		
	ProC I	1.723	.191		
	RetC II	0.295	.588		
	RetE II	0.053	.818		
	ProE II	0.811	.369		
	ProC II	0.203	.653		
A X S	RetC I	0.061	.805	1.602	.129
	RetE I	0.252	.616		
	ProE I	2.321	.130		
	ProC I	5.687	.018		
	RetC II	3.083	.081		
	RetE II	0.953	.329		
	ProE II	0.008	.930		
	ProC II	0.886	.348		
O X S	RetC I	0.986	.322	2.501	.014
	RetE I	0.005	.946		
	ProE I	4.029	.047		
	ProC I	0.122	.728		
	RetC II	5.697	.018		
	RetE II	6.226	.014		
	ProE II	1.521	.219		
	ProC II	1.013	.316		
A X O X S	RetC I	0.100	.753	0.499	.855
	RetE I	0.058	.809		
	ProE I	0.833	.363		
	ProC I	0.540	.464		
	RetC II	0.062	.803		
	RetE II	0.065	.800		
	ProE II	0.020	.887		
	ProC II	0.512	.475		

^aTests of significance using Wilks Lambda criterion.

among factors, only the multivariate Order by Sex, and occasional univariate *F* tests were significant. Men who had the TAT second in order of presentation tended to have the longest scores; the women, the next longest scores; and the men who had

the TAT first, the shortest scores. Men under SA had the longest ProC. Ss under SA, second order, had the longest ProE while Ss under UA, second order, had the shortest ProE.

Order had an even more pronounced

Table 8
Analyses of Variance of SC Ret and Pro

Factor	Variable	Univariate <i>F</i> Tests		Multivariate <i>F</i> Tests ^a	
		<i>F</i> (1,156)	<i>p</i> less than	<i>F</i> (8,149)	<i>p</i> less than
Order (O)	RetC I	0.732	.393	9.727	.001
	RetE I	2.543	.113		
	ProE I	18.507	.001		
	ProC I	4.798	.030		
	RetC II	0.109	.741		
	RetE II	0.224	.637		
	ProE II	16.114	.001		
	ProC II	26.925	.001		
Sex (S)	RetC I	11.135	.001	2.658	.009
	RetE I	7.621	.006		
	ProE I	1.817	.180		
	ProC I	1.982	.161		
	RetC II	5.914	.016		
	RetE II	5.830	.017		
	ProE II	0.005	.941		
	ProC II	1.640	.202		
O X S	RetC I	0.010	.921	0.087	1.000
	RetE I	0.016	.901		
	ProE I	0.010	.921		
	ProC I	0.012	.912		
	RetC II	0.052	.819		
	RetE II	0.058	.810		
	ProE II	0.112	.738		
	ProC II	0.057	.811		

^aTests of significance using Wilks Lambda criterion.

effect on the SC scores, as seen in Table 8. In each univariate comparison of Pro, except ProC I, and in the multivariate *F* test, second occurrence in order of presentation

lengthened the SC scores. Women's SC Ret scores were significantly longer than the men's, but there were no significant differences on the SC Pro scores.

Table 9
Averages of Intra-subject Correlations between
Men's Session I Word Frequencies and Ret and Pro Scores

Stimulus Cue	Administration	<i>N</i>	Ret		Pro	
			C	E	E	C
TAT	SA	20	.26	.15	.14	.21
	UA	21	.08	.20	.13	.10
SC	(UA)	21	.41	.26	.58	.40

Word frequency and extension scores.

The number of words in a story was examined in relation to its extension variables, on the possibility that such a spurious factor might account for a relatively great proportion of the variance. The Spearman ρ was found for each subject by taking his stories' word frequencies and his extension scores. Table 9 reports the average correlations (calculated by taking the z values of Spearman ρ 's) for Session I, TAT first in order. Thus, the word frequency is a negligible factor in the determination of the TAT extension scores, while it accounted for up to a third of the variance in the SC scores.

Discussion

The variable of ProE emerged as the most stable extension variable, receiving the highest loadings in the canonical correlations of Session I and Session II, and of TAT and SC. In the latter analysis, there was a second significant root which had loadings on ProC and RetE. Thus, the fantasy story technique may yield similar protension variables, regardless of whether TAT or SC cues are used. This finding increases our knowledge, as a generalization may be made from one study to another which used a different stimulus cue, if the populations and methods are similar to the present one.

Variations in method, such as in the order of presentation, or in the relative structure of the TAT administration, significantly influenced the length of extension scores. When the cues were presented later in order, Ss told fantasy stories with longer TAT and SC extension scores. This facilitation or "warm-up" effect of later presentation may have been due to the Ss becoming more deeply engrossed in the task and more affectively involved in exploring their own lives. The facilitation effect did not, however, carry over the week's interval between Session I and Session II, nor was it unique to any particular combination of stimulus cues, Set X or Set Y. Order had a more prominent effect on SC Pro and TAT Ret, but the reasons for this difference are obscure.

The effect of presentation order on fantasy story measures of extension of personal time variables is similar in some

ways to the effect of order on fantasy story measures of n Ach, which Atkinson (1958) observed. Since Atkinson found irregular cyclic effects on n Ach beyond the first 20 or 30 minutes of group testing, he advised limiting the TAT n Ach measure to four or five stories. He also found that the residual effects did not carry over from one test day to another. Thus, the "error" which Atkinson sought to eliminate from the measurement of TAT n Ach appears to be similar to the highly interesting increase in fantasy story extension in the present study. If this is the case, then the increase in extension perhaps may reflect the subject's sequential progression in unfolding his life through his fantasy stories. The data of the present study did not provide an explanation for this transitory phenomenon, which should be a topic for later research.

The imposition of the structured administration on the TAT lengthened the extension scores, especially the ProE scores, relative to the unstructured administration. Thus, extension of personal time scores, and particularly ProE, are very susceptible to variations in procedure.

The distinctions between protension and retension, and between cognitive and empirical, appear to be relevant in scoring fantasy stories for extension of personal time, supporting Murray's (1959) distinction between prospection and ordination. In the canonical correlation of the SC and TAT variables, the first root was loaded with only ProE, and the second significant root was loaded with both ProC and RetE. While it is not clear what may account for ProC and RetE's common loading on the latter root, the specification of the variables did prove to be of value.

The protension-retension distinction is especially important in the case of the SC. The rather high correlation between SC RetE and C probably reflected the artifact that neither score was very meaningful, as the SC task itself is future-directed. This conclusion is supported by the facts that the SC Ret had the lowest interjudge agreement, and that the spurious factor of word frequency was significantly correlated with SC scores.

Interjudge reliability in scoring the extension variables was generally quite high, demonstrating that there is a sufficient objective basis for scoring personal time from fantasy stories without calling the subject's attention to the fact that it is being scored. Interjudge reliability did approach the marginal low limit (.70 to .85) in the cases of the SC and the Ret variables. Thus, conclusions drawn about these variables must be cautiously weighed.

The empirical construction of matched sets of stimulus cues in Study I was proven to be highly successful by the results of Study II. Each of the four Set X's means were within one *SD* of its counterpart Set Y's means. An exception to this was the case of SC ProC Set Y which was higher than SC ProC Set X, probably because SC stimulus cue 3 explicitly demanded a response to be scored as ProC (Footnote 2). As in other personal time measures where the S's attention is directed to the future, the instructional demand seems to lengthen the protension score (Wohlford, 1967).

The inter-test correlations between stimulus cue sets X and Y accounted for less than half the variance, so the sets would fail as equivalent forms of the same test. However, inter-test or test-retest reliability should not be treated as a necessary requirement for a personality measure, as a S's response to one stimulus may change his state relative to the presentation of later stimuli (McClelland, 1958).

The substantial proportion of the variance that the stimulus cue sets did have in common demonstrated the moderate stability of the constructs, despite variations in the stimuli. Indeed, the TAT variables attained consistently higher test-retest reliability than the SC variables in spite of the fact that the sets of SC cues were analytically more identical than the sets of TAT cues. Rather than similarity of the stimulus cues, *per se*, the cues plus the structure of their administration is seen as an important contributor to the stability of the extension variables. Ranked in order from least to most structure, SC-(UA), TAT-UA, and TAT-SA, the conditions attained an increasing stability.

The use of a structured TAT administration (SA), rather than less structured

one (UA), increased the inter-test reliability for the men, but had no such effect for the women. Perhaps conforming to the perceived situation demand, the women in the UA condition may have adhered as closely to the offered instructions as did the women in the SA. In contrast, the men in UA may have taken the additional freedom as opportunity to respond in a haphazard fashion. Other sex differences were minimal, especially in light of the fact that different stimuli were used for the men and women. On the whole, the similarities between the men and the women are much more impressive than the differences. Therefore, extension of personal time and its components seem to be promising conceptual variables for the systematic study of personality.

REFERENCES

- Atkinson, J. W. (Ed.). *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Barndt, R. J. & Johnson, D. M. Time orientation in delinquents. *Journal of Abnormal & Social Psychology*, 1955, 51, 343-345.
- Davids, A., Kidder, C. & Reich, M. Time orientation in male and female juvenile delinquents. *Journal of Abnormal & Social Psychology*, 1962, 64, 239-240.
- Davids, A., & Parenti, A. N. Time orientation and interpersonal relations of emotionally disturbed and normal children. *Journal of Abnormal & Social Psychology*, 1958, 57, 299-305.
- Epley, D. & Ricks, D. F. Foresight and hindsight in the TAT. *Journal of Projective Techniques*, 1963, 27, 51-59.
- Graves, T. D. Time perspective and the deferred gratification pattern in a triethnic community. Unpublished doctoral dissertation, University of Pennsylvania, 1962.
- Kahn, P. Time span and Rorschach human movement responses. *Journal of Consulting Psychology*, 1967, 31, 92-93.
- LeShan, L. L. Time orientation and social class. *Journal of Abnormal & Social Psychology*, 1952, 47, 589-592.
- McClelland, D. C. Methods of measuring human motivation. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958, pp. 7-42.
- Mischel, W. Delay of gratification, need for achievement, and acquiescence in another culture. *Journal of Abnormal & Social Psychology*, 1961, 62, 543-552.
- Murray, H. Preparations for the scaffold of a comprehensive system. In S. Koch (Ed.)

- Psychology: A study of a science* Vol. 3. *Formulations of the person and the social context*. New York: McGraw-Hill, 1959. Pp. 7-54.
- Murstein, B. I. *Theory and research in projective techniques: Emphasizing the TAT*. New York: Wiley, 1963.
- Ricks, D., Umbarger, C., & Mack, R. A measure of increased temporal perspective in successfully treated adolescent delinquent boys. *Journal of Abnormal & Social Psychology*, 1964, 69, 685-689.
- Ross, R. T. & Morledge, J. Comparison of the WISC and WAIS at chronological age sixteen. *Journal of Consulting Psychology*, 1967, 31, 331-332.
- Wallace, M. Future time perspective in schizophrenia. *Journal of Abnormal & Social Psychology*, 1956, 52, 240-245.
- Wallace, M. & Rabin, A. I. Temporal experience. *Psychological Bulletin*, 1960, 57, 213-236.
- Wohlford, P. *Determinants of extension of personal time*. (Doctoral dissertation, Duke University) Ann Arbor, Mich.: University Microfilms, 1965, No. 65-2022.
- Wohlford, P. Extension of personal time, affective states, and expectation of personal death. *Journal of Personality & Social Psychology*, 1966, 3, 559-566.
- Wohlford, P. A comparison of two direct measures of protension of personal time. Paper presented at the annual meeting of the Southeastern Psychological Association, Atlanta, April, 1967.
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Therapist-Client Interview Behavior and Personality Characteristics of Therapists¹

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Summary: This study was an exploration of the reciprocal behavioral effects of therapist-client interview interactions. Data were also related to projective material about therapists obtained from their Holtzman Ink Blot Technique responses. Behaviors of participants were scored according to Freedman and Leary methods of interpersonal analysis. Spearman rank correlation coefficients provided regression index for data analysis.

Hostile-competitive therapist behavior correlated with similar client behavior and with passive resistance. Supportive-interpretive therapist behavior related to client support-seeking behavior and to low client hostility. Higher therapist movement scores related to high support-seeking and low hostile-competitive client behavior. Therapist hostility content scores were similarly related and also related to low therapist hostile-competitive behavior.

The purposes of this study were to investigate the reciprocal effects of the behavioral interactions of therapists and clients during therapy sessions and to relate the interview behavior to the personality characteristics of the therapists. To meet the first objective, the following question was proposed:

Without regard for who initiated the interaction, does a relationship exist between the interpersonally oriented behavior of the therapist and client during a therapy session?

The second objective was approached by a consideration of the therapist's personality as revealed by an inkblot technique. That phase of this study was exploratory and consisted of comparing Holtzman Inkblot Technique data about the therapists with their own and their client's interview behavior.

To effect these objectives, the therapist and client interview behaviors were evaluated in terms of the interpersonal "pull" that each was attempting to establish in the relationship. It has been proposed and demonstrated empirically in several contexts that the behaviors of two persons in interaction exert reciprocal "pulls" on each other to behave in predictable ways during their interaction.

Freedman (Freedman, Leary, Ossorio, & Coffey, 1951) and Leary (1957) observed this phenomenon and proposed an empirical framework for recording the interpersonal behaviors of the participants

so that this concept could be empirically validated. This method of studying the interpersonal pull of participants in interaction has been applied by Raush (Raush, Dittman, & Taylor, 1959); (Raush, Ferberman, & Llewellyn, 1960) to the study of Ss in residential treatment and matched normal controls and recently by Terrill and Terrill (1965) and MacKenzie (1967) to the study of families in interaction.

Method

Instruments

Therapist-client interactions. The model used to evaluate the therapist and client interactions was the interpersonal system of analysis described by Freedman, *et al*, (1951) and Leary (1957). According to the method, behaviors are described as interpersonally oriented responses which can be plotted around a circumplex and defined in terms of two major axes: a dominant-submissive axis and an affiliative-disaffiliative axis (LaForge and Suckezek, 1955). The circumplex serves to point up the relational aspects of human motives and provides sixteen interpersonal themes which are used to describe the behaviors of Ss in interaction. The sixteen basic categories of the circumplex called reflexes are abbreviated for convenience as follows: A = Dominate; B = Boast; C = Reject; D = Punish; E = Hate; F = Complain; G = Distrust; H = Condemn Self; I = Submit; J = Admire; K = Trust; L = Cooperate; M = Love; N = Support; O = Give; P = Teach (Freedman, 1951).

Using the nodal points of the dominant-submissive and affiliative-disaffili-

¹ Appreciation is expressed to G. Musgrave and to the Computer Institute for Social Science for programming assistance.

active axes as guideposts, these reflexes are often combined into octants (Leary, 1957; Terrill & Terrill, 1965) and quadrants (Raush et al., 1959; Raush et al., 1960) by summing across adjacent categories. In this study, the data were combined into quadrants and were given the following abbreviations; BCDE = Competitive-hostile; FGHI = passive-resistant; JKLM = Support-seeking; NOPA = Supportive-interpretive.

A key concept in the interpersonal method of analysis consists of examining the interpersonal behaviors of the two parties in interaction as attempts on the part of each person to establish an emotional state in the interaction which tends to elicit a predictable response from the other person. The task of the observer in judging the behaviors of the participants in such a dyadic relationship is one in which the judge always empathizes with "the individual whose behavior is being rated" from the position of the "object or objects of the activity" (Freedman, 1951). In other words, the behavior of the first party of the interaction can and often does evoke predictable counter-behaviors from the second party of the interaction. Secondly, the target of the first interaction becomes the initiator of the next interaction; thus the system is an overlapping dyadic one.

Therapist personality characteristics. The Ss' responses to the Holtzman Ink Blot Technique (Holtzman, 1961) provided the data for studying the personality characteristics of the therapist. This technique consists of 45 inkblots which are presented to the S one at a time. Administration follows the usual Rorschach methodology, except that the S, in associating to the inkblot, gives only one response for each blot. An inquiry, from which the determinants, location, and associational content are determined, follows the administration of each blot. Administration of the Holtzman was conducted by a single examiner who was an advanced Ph. D. candidate in clinical psychology and who was not a participant in the in the study. Therapists' protocols were then scored by a clinician at another university.

For purposes of this study, the blots were scored for the following determinants: movement, from appropriateness, form definiteness, color, shading, and the ratio of form definiteness to color and shading. This ratio score was an approximation of one of Holtzman's (1961) factor scores, described by him as a bipolar factor with form definiteness to the detriment of color and shading at one pole and color and shading overriding form at the other end. In addition, human content, hostility, anxiety, and popular responses were scored. Other variables were not used in this exploratory study either because their relevance was not obvious for comparisons with interview material or inspection of the data indicated little subject use of the response or invariance across Ss.

Subjects and Procedures

The Ss for this study consisted of (N = 19) therapist-client pairs. The Ss were selected from a larger pool (N = 28) of therapist volunteers who agreed to participate in a more extensive study of therapist characteristics as they relate to the clinical judgments made by therapists (Mueller and Abeles, 1964). Three criteria determined the selection of the therapist-client pairs for this study. From the larger pool of data, (1) only male therapists were selected since it was felt that the inclusion of female therapists may provide another source of variance that would be difficult to interpret; (2) the therapists had provided the researcher with a tape recorded interview of an early (fifth to seventh interview) session of a self-selected client who was being seen for emotional problems; and (3) the Holtzman Ink Blot Technique had been administered to the therapists.

The Ss selected were currently enrolled Ph. D. candidates in the clinical psychology and counseling training programs at Michigan State University. A breakdown of the nineteen Ss indicated that the two programs were equally represented in the sample of Ss. The Counseling Center serves as the primary agency on campus for the undergraduate and graduate students who seek psychotherapy, and the Ss were either interning at the Center or they were participants in an

advanced practicum in counseling and psychotherapy.

The Holtzman Ink Blot Technique had been administered to each of the *SS* as described earlier. In addition, each *S* provided the researcher with a tape recorded session of an early interview with a therapy case. A typescript was prepared of a ten-minute segment of each tape. All of the selected segments for study consisted of the interview behavior which was initiated twenty minutes after the beginning of the session. This procedure was used to avoid scoring short rapid-fire introductory remarks or being confronted by shortened sessions. The typescripts, tape recorded segments, and Holtzman data provided the material for this study.

Reliability

Reliability as defined in this study consisted of determining whether two judges could agree on the proportion of therapist and client reflexes which occurred in each of the quadrants during the interactions under consideration. To determine reliability, a typescript was prepared for each of the ten-minute segments which provided the basic data for this study. Two judges, one a Ph. D. and a full-time staff member of the Counseling Center, and the second an advanced Ph. D. candidate who was completing her second year of internship at the Center both scored the entire sample of tape segments used in this study. In scoring tape segments, the judges listened to the recordings as they followed the typescripted material.

A scorable unit of behavior was considered to be an uninterrupted flow of speech by one or the other party of the interaction. Within each unit of behavior, the judge scored each reflex twice. The first scoring consisted of rating the dominant interpersonal reflex of the actor, in this study called the *major theme*. The judge then scored the unit for the more subtle emotional state being established by the actor which has been termed here in the *minor theme*. The judges were instructed that the two themes could be identical if a more subtle message were not detectable. These scoring criteria

were developed (Mueller and Dilling, 1968) in the preliminary work which led to this study.

From these data, reliability coefficients were obtained in the following way. For each judge summary scores for all the reflexes in a quadrant were obtained separately for each therapist and client across all the interactions within the ten minute segment used in this study, yielding a ratio for each quadrant to the total number of scored units. Spearman rank order correlation coefficients corrected for ties (Siegel, 1956) were then obtained between judges on the proportions of behaviors that they observed in each quadrant of a tape segment.

Results of the inter-judge Spearman rank order correlational analysis indicated that the reliable quadrants for therapist *major* themes were the hostile-competitive (BCDE) ($r_s = .80$); support-seeking (JKLM) ($r_s = .65$); and supportive-interpretive (NOPA) ($r_s = .63$) quadrants. For client *major* themes the hostile-competitive (BCDE) ($r_s = .66$) and support-seeking (JKLM) ($r_s = .55$) quadrants yielded significant agreement scores. With regard to the *minor* themes, the support-seeking ($r_s = .60$) category was reliable for therapist behaviors whereas for clients the passive-resistant category ($r_s = .49$) and support-seeking categories ($r_s = .61$) were reliable. The remaining quadrants yielded nonsignificant correlation coefficients; so analysis of the therapist-client interview behavior was restricted to a study of behavior in the reliable quadrants.

Analysis of Data Regarding Research Questions

To answer the research questions, an average was obtained between the proportions ascribed by each judge to the behaviors of each therapist and client for the reliable quadrants. In this way, new proportions were obtained for each therapist and client which represented the average between-judge percent of responses in a given quadrant. This procedure represented the data most accurately since it used all of the information from both judges without reverting to the use of a criterion judge.

With the data in this form, it was pos-

sible to develop a correlation matrix of data between all combinations of therapist and client behaviors. In addition, to answer the question regarding the relationship between therapist personality characteristics and the interview behavior, the Holtzman data were rank ordered where the highest rank always referred to the therapist who produced most movement responses, highest form definiteness, and so forth. These data were then correlated with the ranked proportions of therapist and client interview behavior. As before, Spearman rank order correlation coefficients corrected for ties were consistently used as the regression index.

Results

The first objective of the study was to investigate the extent and nature of the reciprocal effects of therapist and client interview behaviors. To answer this question, therapist and client interview behaviors were rank ordered according to the proportion of behaviors that were produced by both participants of the interaction in each of the reliable behavioral quadrants. The results of the analysis of those data are presented in Table 1. Since the purposes of the study were to

explore avenues which may be productive for further research, probability levels were liberally set and significance levels are reported for all events at the ($p < .10$).

A word needs to be said about the categorization of interview data into the various quadrants. The quadrant name reflects the principal behavioral content of the category and the code letter refers to the original classification of reflex mechanisms (Freedman, 1951). The basis for assigning behaviors to the various quadrants has been described earlier and essentially follows the schema proposed by Freedman.

The category that may need further clarification is the "support-seeking" category. Essentially the client and therapist behaviors which were assigned to this category had the same interpersonal intent - that of seeking help, cooperating, or attempting to affiliate, but always in submissive ways. These behaviors were seen as intending to elicit assistance, strength, or support from the other party.

The meaning of such behaviors would be quite different if they were the mechanisms used by the therapist rather than the client. For the client, the judges placed the support-seeking behaviors in

Table 1
Comparisons^a of Interview Behavior of (N = 19) Therapists and Clients on Major and Minor Interpersonal Themes

Therapist Behavior	Client Behavior			
	Major Theme		Minor Theme	
Major Theme ^b	BCDE	JKLM	FGHI	JKLM
Competitive-Hostile (BCDE)	.54**	-.76***	.40*	-.78***
Passive Resistant (FGHI)	—	—	—	—
Support-Seeking (JKLM)	.24	-.12	.18	-.10
Supportive-Interpretive (NOPA)	-.57***	.80***	-.29	.69***
Minor Theme				
Support Seeking (JKLM)			.07	.01

* $p < .10$

** $p < .05$

*** $p < .01$

^a Spearman Rank Order Correlation Coefficients corrected for ties.

^b Inter-judge reliability for behaviors in some therapist and client quadrants insufficient to permit statistical treatment of those data.

this quadrant if they reflected appropriate expressions of support-seeking - a reaching out by the client for assistance. For the therapist, the judges placed the behaviors in this quadrant if the therapist essentially reversed roles and was depending on the client for support.

It can be seen that in Table 1 competitive-hostile therapist behavior is significantly and positively correlated ($.54, p \leq .05$) with client hostile-competitive behavior. Secondly, therapist behavior is negatively correlated with support-seeking behavior ($-.76; p \leq .01; -.78, p \leq .01$) on the part of the client in both the dominant and more subtle client behaviors. In addition, the therapist's competitiveness is correlated positively with subtle (minor theme) passive-resistance ($.40, p \leq .10$) on the part of the client. On the other hand, supportive-interpretive behavior in the therapist's major theme is correlated positively and significantly with support-seeking client behavior ($.80, p \leq .01; .69, p \leq .01$) both in the dominant and more subtle theme of the client.

The second research question was an exploratory one in which Holtzman Ink Blot Technique data were searched to determine whether patterns emerged which suggest further research into the effects of therapist projective material on their own and their client's interview behavior. Spearman rank order correlation coefficients obtained by comparing the therapists' rank ordered Holtzman variables with the therapist and client interview behavior are reported in Table 2.

Among the correlations, two patterns of Holtzman variables stand out as likely non-chance events: movement and hostility. Since the remaining significant correlations in the table provided little patterning, no effort was made to interpret those data.

In this study, the therapist's projections of movement (M) weighted for the dynamic character of the projection and his projections of movement with human associational content (HM) pattern with client interview responsivity. Therapists who project more movement into the blots elicit more support-seeking ($M=.48, p \leq .05; HM=.40, p \leq .10$) behavior and less hostile-competitive ($M= -.53, p \leq .05; HM=$

$-.42, p \leq .10$) behavior in their client's major themes. High movement is also associated with less passive-resistant ($HM= -.43, p \leq .10$) behavior and more support-seeking ($M=.53, p \leq .05; HM=.44, p \leq .05$) behavior in the subtle themes of their clients.

The second pattern of Holtzman responses is related to the hostile content of the projections. The therapists who scored higher on the projection of hostile content into the blots were themselves less hostile ($p \leq .46; p \leq .05$) in their relationships and elicited fewer hostile responses from their clients ($p \leq .54; p \leq .05$) and more support-seeking behavior ($.69, p \leq .01; .46, p \leq .05$).

To assist in interpreting this finding, it was decided to explore the relationship between the hostility scores of the therapists and their form appropriateness scores. The purpose of this additional inquiry was to determine whether the therapist's form level suffered at the expense of his hostile projections. A Spearman rank order correlation coefficient of ($r_s=.15$) was obtained between the two variables in question. It was concluded on the basis of this result that the appropriateness of form was not affected by the projection of hostile content.

Discussion

The results of the interview interaction analysis stimulate several questions. In accord with the rating method proposed by Freedman (1951), the basic framework that the judges used in scoring the behaviors of the therapists and client was that of empathizing with the object of the action and answering the question, "What is the subject trying to do to the object?"

The object of the therapist's behavior was the client. When his behavior was scored as hostile-competitive, it was seen by the judges as being directed at the client. The high positive correlations between therapist hostile-competitive behavior and client counter-behavior may not be problematic since one could contend that such responsivity is therapeutic. However, since the therapists' hostile-competitive behavior is also coupled to client resistance and to low help-seeking behavior, a question can be raised about

Table 2
Comparison^a of (N = 19) Selected Therapist Holtzman Inkblot Scores
with Therapist-Client Interview Behavior

<i>Therapist Behavior</i>	<i>Therapist Holtzman Scores</i>									
Major Theme ^b	FA	FD	C	Sh	FD/C+Sh	M	HM	AX	HS	P
Hostile-Competitive	.17	.11	-.14	.21	.03	-.25	-.14	-.19	-.46**	-.13
Support Seeking	-.03	-.14	-.42*	-.09	.21	-.10	-.23	.23	.13	-.00
Supportive-Interpretive	-.14	-.03	.25	-.18	-.06	.13	.01	.04	.37	.15
Minor Theme										
Support Seeking	-.19	-.14	-.28	-.09	.12	-.10	-.13	.28	.20	-.04
<i>Client Behavior</i>										
Major Theme										
Hostile-Competitive	.11	-.00	-.42*	.08	.19	-.53**	-.42*	-.41*	-.54**	-.23
Support Seeking	.08	.19	.23	-.12	-.01	.48**	.40*	.29	.69**	.40*
Minor Theme										
Passive-Resistant	-.12	-.36	.00	-.02	-.17	-.29	-.43*	-.07	-.39	-.59***
Support Seeking	.15	.06	.18	.01	-.02	.53**	.44*	.05	.46**	.23

* $p < .10$

** $p < .05$

*** $p < .01$

^a Spearman rank order correlation coefficients corrected for ties.

^b Interjudge reliability on remaining quadrants in major and minor themes insufficient for statistical analysis of data.

the therapeutic value of such behavior if cooperative client behavior is seen as productive of movement.

It should be pointed out that cooperative client behavior cannot be construed as indicating docile, passive behavior or lack of expressiveness of a range of feelings during the interview studied. Although a client may have many objects during a therapy session, only the meaning of the behavior as directed at the therapist was rated. In other words, the client may have been expressing angry feelings about other persons, but if his attitude toward the therapist was cooperative, he was scored as being cooperative with the therapist. In this study, the "other" in the case just cited who was the object of the client's angry feelings was not scored. However, since the relationship between the sets of feelings directed at the therapist and expressed in interactions with others is a central feature of a therapy relationship, a study has been undertaken in which the object of these feelings is being recorded and related to the client's behavior toward the therapist for study of possible transference implications.

A second consideration in interpreting the meaning of the therapist's behavior is the fact that the therapist's words may not have been hostile-competitive words since the scoring system undercuts the words and judges the therapist's affect. It would be very interesting to study the effects on client responsivity to inconsistency between the words used by the therapist and the emotional tone of those words. For example, two judges could re-score these data solely in terms of the positive or negative valence of the words without regard for the underlying feeling state. Such a study could clarify the issue regarding whether incongruence between communication states accounts for the client's response categories or whether the expression of anger toward the client in itself impedes the support-seeking client behavior.

Turning now to the relationship between the projective data about therapists and interview behavior, it was found that the movement scores of the therapists were significantly related to several aspects

of their clients' interview behavior. If movement scores are considered from the framework of a capacity to fantasize and through fantasy to establish empathic relationships, such a capacity would seem important to therapy. Through such a process, a therapist in fantasy can recreate some of the emotional conditions expressed by the client in order to understand client behavior.

The results of a previous study (Mueller and Abeles, 1964) suggested that a therapist's projection of movement is, in fact, related to empathy. In this study, there would seem to be additional inferential support for that position since the clients of therapists with higher movement scores sought more help, and were less passive-resistant or hostile-competitive than were the clients of therapists with lower movement scores.

The projection of hostile content was also found to be related to client interview behavior. The interesting thing here was that the higher projection of hostile content was associated with less hostile-competitive interview behavior and with more help-seeking client behavior. In order to clarify the meaning of this finding, the hostility scores of the therapists were compared with their form appropriateness scores. If the therapist's form level suffered at the expense of his hostile projections, one would wonder whether such a therapist would distort the therapy material and unwittingly project his hostility onto his client. On the other hand, if the therapist maintained good form level even though the content of the projections was hostile, one could infer that he has good control of his hostility and can use it constructively.

The finding that the therapist's form level was unaffected by his projection of hostility cannot be used to explain why the therapists who were higher on the projection of hostile content elicited less client hostility and more help-seeking behavior. But it does rule out the alternative that perceptual distortion occurs more often with this group which may be communicated in the therapy relationship.

Perhaps the therapists who projected more hostile content are simply less

frightened by it and can cope better with their own hostile feelings. One of the factors which may be operating in the low-hostile therapist is the denial of hostility which, if it were true, would certainly make him more vulnerable to its erratic and disguised expression. At any rate, the relationship between therapist hostility and interview behavior deserves further exploration which might be achieved through the design of a study in which the denial of hostility was the experimental variable.

REFERENCES

- Freedman, M. B., Leary, T. F., Ossorio, A. G., & Coffey, H. S. The interpersonal dimension of personality. *Journal of Personality*, 1951, 20, 143-161.
- Holtzman, W., Thorpe, J., Swartz, J., & Herron, E. *Inkblot perception and personality*. Austin: University of Texas Press, 1961.
- LaForge, R. & Suczek, R. The interpersonal dimension of personality. III An interpersonal check list. *Journal of Personality*, 1955, 24, 94-112.
- Leary, T. *Interpersonal diagnosis of personality*. New York: Ronald Press, 1957.
- MacKenzie, M. The interpersonal behavior of normal and clinic family members. Unpublished Dissertation. East Lansing: Michigan State University, 1967.
- Mueller, W. J. & Abeles, N. The components of empathy and their relationship to the projection of human movement responses. *Journal of Projective Techniques & Personality Assessment*. 1964, 28, 322-330.
- Mueller, W. J. & Dilling, C. A. The usefulness of studying interpersonal themes in psychotherapy research. Unpublished Manuscript. East Lansing: Michigan State University, 1968.
- Raush, H. L., Dittmann, A. T., & Taylor, T. J. The interpersonal behavior of children in residential treatment. *Journal of Abnormal & Social Psychology*, 1959, 58, 9-26.
- Raush, H. L., Farbman, I., & Llewellyn, L. G. Person, setting, and change in social interaction. II. A normal - control study. *Human Relations* 1960, 13, 305-331.
- Siegel, S. *Nonparametric Statistics*. New York: McGraw-Hill, 1956.
- Terrill, J. M. and Terrill, R. E. A method for studying family communication. *Family Process*, 1965, 4, 259-290.
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Book Reviews

Buros, O. K. *The Sixth Mental Measurements Yearbook*. Highland Park, N. J.: Gryphon Press, 1965. xxvi + 1714 pp. \$33.00.

Summarily, *The Sixth Mental Measurements Yearbook* is a comprehensive and encyclopedic review of psychometric literature, offering critical reviews, bibliographies and references of new, revised, supplemented and important older tests, covering a five-year period from 1959 to mid-1964.

Although the *Yearbook* series format is simple, its scope is quite broad, and results in rather complex editing and publishing problems. Not the least of these is a sobering set of statistics presented in *The Sixth MMY*. Buros (1965, p. xxx) reports 628 new tests, and 445 revised and supplemented ones. This suggests an average of 125 new and 90 revised tests a year. Even if the rate of revisions and creations remains constant and does not increase, the size and task of compiling the forthcoming yearbooks will increase. As an example, the increase in tests for *The Sixth MMY* was 27.4%. At what point will the physical weight of the *Yearbook* be too much for the flaccid muscles of the sedentary psychometrician to bear? More seriously, at what point will the deluge of creations and revisions suffocate the consumer? Can the test consumer bear the burden of sorting psychometric trash from treasure alone? Four decades ago Buros felt not, and began the MMY series to aid both test consumer and creator. But four decades ago psychometry was still a toddler and naively unaware of its procreative powers. Now in its adolescence its basic urges are producing not arithmetically, but geometrically. To review this productivity, the MMY has been forced to grow faster and larger than the field, the current result being a mammoth volume involving superhuman energy and dedication to edit and publish. Nevertheless, singly, with small staff and modest monetary backing, O. K. Buros manages to keep producing the elephantine series and still maintain its high level of quality. Phenomenal! Even more humbling a feat is his ability to assemble the 365 dedicated and highly qualified reviewers needed for *The Sixth MMY*.¹

Obviously something is going to have to give. Most of us have never known the feeling of being without the *Yearbooks*, but Buros has even considered this alternative to the growing pressure (1965, p. xxiv). While the thought of

terminating the MMY series fills him with apprehension, it should be terrifying to conscientious individuals in the field.

So let us consider some other alternatives. Buros himself has suggested three possible economy measures:

1. Eliminate bibliographies of test references (1959, p. xxvi).
2. Marked reduction of excerpts from book reviews pertinent to psychometry (1965, p. xxxii).
3. Exclusion of tests and reviews from English-speaking countries other than the U. S. (1959, p. xxvi).

In response to these suggestions, first, Buros changed his mind about dropping the test reference bibliographies after reviewers of *The Fifth MMY* voiced much concern that such an economy measure would lessen the value of the *Yearbook* as a comprehensive treatment of psychometric literature (1965, p. xxiv). We can only concur with these reviewers. In fact we would like to see complete bibliographies, citing again those already cited in previous yearbooks. Realizing that all one has to do is to refer to previous *Yearbooks* for these is not at all comforting if it should ever happen that previous editions of the MMY series become unavailable.

We feel less strongly about the reduction or, for that matter, the elimination of excerpts from book reviews. If, as Buros suggests (1965, p. xxxii), two-thirds of the book reviews were not worth excerpting, why not offer original reviews in the tradition of the test section? A great idea—except for two problems: 1) the worthy third of the reviews would be lost and 2) creating original reviews can be done by only qualified reviewers—so where do we find the additional reviewers willing and dedicated enough to bear the extra burden? Perhaps these book reviews can be relegated to a separate publication.

Inclusion of tests only from the U.S. is an easy but fateful isolationistic policy which we personally would like to see eliminated from the doctrinaire currently followed by the U.S. psychological world. We seem to be charting a course which tends to make us largely insensitive to psychological activity outside our own borders, the result of which is needless duplication and widespread ignorance of foreign developments. Rather we would like to see an inclusion of multi-lingual psychometric literature. Such an inclusion would certainly neither reduce the size and cost of the MMY series nor make it any easier to edit and publish. However, it would be a monumental precedent which hopefully would set an irreversible trend toward tearing down the nationalistic barriers clearly

¹ For an excellent history of the development of the MMY and the Buros mystique, see Langmuir, 1960.

visible in the field of psychological literature.

As is evident from the foregoing, we can neither foresee the possibility of decreasing the size, effort, nor the expense of editing and publishing the MMY series and still maintain its quality and objectives. But for the psychometric world to expect Buros to carry the burden alone—ad infinitum—is both ingenuous and irresponsible. To say that Buros edits and publishes this series because of a profound dedication to the concept of quality in the field of psychometry seems an incredible statement. Yet, nonetheless, this does appear to be the primary motivation.

So, like it or not, the psychometric community will soon have to decide if the *Yearbook* series is valuable enough to guarantee its perpetuation. Being optimistic concerning the community's responsibility and foresight, we will make a suggestion or two as to steps which might insure the MMY's continued existence.

First, the most logical course would be for Division Five of the APA to assume the sponsorship and publishing of the MMY series as one of its responsibilities. Editorship should remain with Buros and his present staff. But there should be an understanding that before Buros' retirement from editorship he should have trained an editor and staff willing to carry on the high quality and objectives of the *Yearbook* series.

Second, if Division Five of the APA doesn't wish to become involved, perhaps a concerned individual with a talent toward fund raising could rise to the need and persuade a few wealthy test distributing corporations to set up a perpetuating tax exempt foundation to lend financial support to the MMY series. Although such a cooperative enterprise was sought in the beginning (Langmuir, 1960, p. 389)—the idea stands a much better chance now than in an earlier era, because of the present tax structure and laws. In pursuance of this course, however, caution must be maintained to guard against interference and adulteration of the series' objectives and to insure the series' perpetuation after Buros lays down his pen.

Admittedly these suggestions stand divested of their associated organizational problems and complexities. Nonetheless, the series is proof that these difficulties can be overcome and that publication of outstanding quality and scope can be continued in the future as it has in the past.

REFERENCES

- Buros, O. K. *The fifth mental measurements yearbook*. Highland Park, N. J.: Gryphon Press, 1959.
- Buros, O. K. *The sixth mental measurements yearbook*. Highland Park, N. J.: Gryphon Press, 1965.
- Langmuir, C. R. Review of O. K. Buros, *The fifth mental measurements yearbook*. *Contemporary psychology*. 1960, 5, 387-390.
- Donald Lange
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- Sarason, Irwin G. *Personality: An Objective Approach*. New York, John Wiley and Sons, 1966, 670, +xvi pp. \$8.25.

Sarason's present volume on personality reflects, as have his other publications, an explicitly behaviorist view of the workings of personality. He ties his conclusions tightly to the observed data and avoids speculation for the most part although he is willing, at some points, to indulge in mild speculative ventures out of the realm of hard data. In the main, however, he quite generally seems to want to have it made known that the study of personality can be and is, in fact, an empirical science. In this he succeeds quite well. As he himself states, the present volume provides a realistic survey of current objective analyses of personality.

The volume itself is divided into five parts: 1) views of personality; 2) personality assessment; 3) the experimental study of personality; 4) personality development; and 5) deviant behavior. Within this context he has not attempted to present a comprehensive and detailed survey; rather, he discusses findings in the area of personality assessment, the experimental study of personality, personality development, and deviant behavior with a view toward organizing the data in such a way that it will illuminate some of the issues and problems that are a current concern in the field of personality. While some argument might be generated regarding the choices which he has made for inclusion within the volume, it is noteworthy to note that Sarason's present stance vis-a-vis personality theory and personality research is quite characteristic of current American thought regarding an objective approach to the study of personality. In this he stands squarely in the midstream of current thought. His treatment of the physiological aspects of individual differences is perhaps somewhat less developed than might have been warranted but, in a survey of this sort, one has to trade-off more extended discussion versus the necessity for inclusion of represen-

tative points of view. The same consideration could be raised regarding his treatment of animal research as it relates to personality factors.

In general, it would appear that Sarason has done an excellent job of bringing together in one source many of the objective research studies which have been done on various aspects of personality and personality function. The fact that he has had to be perhaps somewhat cursory in the assessment of some of these areas would seem to be more a function of the space considerations as well as a desire to be representative than to any other factor. He is to be commended for an excellent treatment of behavior modification. Inclusion of this material will prove quite useful for graduate students in the field since it does represent a new and emerging trend within the field of clinical psychology. Also of note, is his treatment of the developmental aspects of psychopathology, an approach which has been relatively widely neglected by personality theorists even though lip service is often paid to the developmental concepts that have been advanced by those such as Freud and Erikson.

On balance, Sarason has presented a very good integrative summary with regard to the major research findings in the areas of personality study noted above. His text should prove useful for both upper-undergraduate and graduate courses in personality and will probably serve as a fruitful source of heuristic input for the student.

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O. J. Harvey (Ed.), *Experience, Structure and Adaptability*. New York: Springer, 1966. 406 pp., \$9.00.

Boring (1929) emphasized the concept of the zeitgeist, and psychologists have been employing the term ever since. If the reader can stomach use of the term yet another time, it can be said that Harvey's book is part of the zeitgeist of reaction against an overly simple stimulus-response psychology in which man is conceived of as a passive being. In place of this simple S-R view are many current alternative positions: man as an information processing being, man as a creative actor upon his environment, and related concepts of reaction to stimulus variation, cognitive style, etc. This book of 16 chapters is a manifestation of the cognitive approach, although some individual contributors may not wish to affiliate themselves with such a rubric.

It is common for reviewers to complain that books edited by someone, as opposed to written entirely by an author, are uneven. This complaint probably recurs because it is a valid criticism. In part it applies to the present collection. Except for the overall perspective mentioned above, many of the articles seem quite different from one another, although not as much different as one often encounters in edited books. The editor, or someone, has made an attempt to link them together by section headings, e.g., "Part II. Personality Structure, Flexibility and Creativity." However, the reader soon learns that the headings are deceptive, and that the all-too-prevalent practice of over-using the word "creativity" has been employed. It is especially painful to those of us doing research on creativity to see the word thrown about with little thought for its defining characteristics. Ironically, this point is carefully documented in an important methodological paper by Getzels and Csikszentmihalyi (Ch. 15) who discuss the criterion problem in creativity. The major problem is that different measures of creativity often show little inter-relationship among themselves, causing one to question whether or not it is justifiable to say that they all measure "creativity". An equally good methodological discussion is provided by Scott (Ch. 16) who rips into what he considers the loose way in which concepts like flexibility and rigidity have been employed.

Perhaps the most fascinating part of the book is that part consisting of chapters by Harvey and his associates (Ch. 1, 2, 4, and 10). He has developed a theory of conceptual functioning or "structure" as he calls it, based on four levels of concreteness-abstractness or complexity-simplicity. To oversimplify Harvey's levels, level 1 subjects are authoritarian and the most concrete of the four systems of functioning. They tend to think in black-white terms and remind one of the authoritarian personality. Level 2 functioning is believed to arise out of arbitrary, capricious child-rearing practices, and result in a very oppositional person. System 2 persons are low on authoritarianism because they oppose all authority in a rather rigid manner. Although slightly higher in conceptual functioning, they are in many ways as irrational as the system 1 people. At system 3 we have the next-to-highest level of functioning, and it is assumed to result from childhoods filled with over-indulgence. These system 3 people are thus somewhat limited in exploring their world, due to dependency established early in life, but they achieve some exploratory skills by learning to manipulate their parents. Finally, level 4 consists of the highest level of abstract

functioning, and these more complex individuals perform best on Harvey's construct validation measures.

This personality theory of levels of functioning is an important one and stands out as the most original contribution to the book. A person is categorized into level of functioning on the basis of his This-I-Believe Test score. Readers interested in further details should consult the book or the previous work of Harvey.

The reviewer is enthused more about Harvey's work for two reasons. First, I am highly involved in the complexity-simplicity issue (Eisenman, in press). Second, not only is it one of the most original parts of the book, but also the rest of the book, while of high quality, is not that new. Hunt (Ch. 11) has an interesting article on enrichment, cultural deprivation and the like; Ainsworth (Ch. 8) discusses the evidence pertaining to maternal deprivation and intellectual development; and White (Ch. 6) has some interesting things to say about response to stimulus variation. In addition, there are several other chapters whose authors display a high level of competence. The major drawback is that much of this is old hat in our fast moving technological age. It is recent old hat to be sure, but old hat nevertheless. What I mean is that the reader who has consulted other books and articles on cognitive structure and the like will find that his previous views are reviewed here. If all we ask is that a book handle its subject matter in an accurate manner, then this book is a winner. If we additionally ask for something new, the book leaves something to be desired, unless the reader has not delved deeply into the topics considered. For such a reader, discovering many of the issues for the first time will make this seem like one of the greatest books of the century. But, as many of us have kept up with the field, the book seems moderately high in redundancy.

The above-mentioned criticisms should not deter one from reading specific chapters which might be new to him. He can be assured that what he reads will probably be of high quality. Even here a word of caution is in order. Thompson (Ch. 5) does a decent job of discussing his topic, but he uses the word "parameters" too often. This detracts from the reader's enjoyment. It is important to point out these stylistic faults, as they can help a writer. For example, it was once mentioned to me that I use the word "thus" too frequently. Thus, I seldom use the word anymore. Brody's model (Ch. 14) of international relations may be a good preliminary consideration of systems theory and decision-making theory as it applies to international relations.

But, unless I missed something, it seems to be a chapter with many obvious points. This may be necessary when one first starts out in an area, such as linking the systems and decision-making approaches to international relations, but if so the question arises: should the chapter be included?

Many of my criticisms may be due to the fact that the book is an outgrowth of a three-day conference. It is just not a simple task to make a good book emerge from a conference. Had this book appeared several years ago it would easily be a landmark. Today, its major usefulness may be as a reference book for someone interested in some of the topics covered by individual chapters.

REFERENCES

- Boring, E.G. *A history of experimental psychology*. New York: Appleton-Century-Crofts, 1929.
- Eisenman, R. Personality and demography in complexity-simplicity. *Journal of Consulting Psychology*, 1968, in press.
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Kleinmuntz, Benjamin (Ed.). *Problem Solving: Research, Method and Theory*. New York: Wiley, 1966. 406 pp., \$6.95.

This is the first volume in a planned series, based on annual symposia on cognition at the Carnegie Institute of Technology. The editor's role was obviously more related to planning and organizing the symposia than to the editing of the book, since people other than Kleinmuntz have written the introduction and the epilogue. In addition, there are some typographical errors, such as the inappropriate heading on several pages, and also the failure of the references to include at least two citations in the text.

Problem solving is an important aspect of human behavior. Whether it is a unique field or can be described only via principles of learning is less obvious. This book presents two viewpoints in problem solving: the computer-information theory approach and operant conditioning analysis. The former attempts to deal with problem solving as a special field of endeavor, while the operant conditioning approach, as represented in chapters by Goldiamond (Ch. 8), Skinner (Ch. 9), and Staats (Ch. 10), tends to view problem solving as merely one aspect of learning, and therefore capable of being understood by the established principles of learning. These two divergent approaches do not exhaust

the ways in which problem solving may be viewed. Consequently, the book's focus is more narrow than its title would imply. Nevertheless, what is contained is quite informative and is sure to add to the reader's understanding of the area.

The contrasting methodologies of the two approaches represented are interesting. The computer-information theory people often rely on having subjects report out loud how they are going about the business of solving the particular problem. The protocols are then analyzed to see if the researcher can gain insight into how the subject went about his problem. A subject may obtain the correct answer but still be considered in error if his method of problem solving violates the rules of the game as defined by the experimenter (cf. Ch. 3 by Paige and Simon on solving algebra word problems).

In contrast to the above-mentioned method, the operant condition trio tend to object strongly to any attempts to see what is going on inside the head of the organism. Our hard-nosed operant men wish to have the events they investigate firmly anchored in stimulus-response relationships, and the appeal to internal processes is looked upon very negatively. As a consequence, they define their problem very differently and have a tighter methodology. Whether or not this tighter methodology leads them to the kinds of answers we want is another question. In fact, one suspects that the computer-information theory people ask different questions from those the operant conditioning devotees ask. Comparison is very difficult when two teams are playing at a different sport.

It was the reviewer's impression that the operant conditioning writers had a clearer conceptual focus. They seemed to provide meaningful answers to the questions they asked, and their studies seemed to leave less room for doubt than the approach of the other authors, who at times seemed rather loose. There are several reasons why this contrast should appear. First, it may be that the operant conditioning approach is in fact superior, allowing its adherents to make more sense when they discuss any issue vis-a-vis someone from a different school. Second, it may be that the information theory investigators are getting at important problems which, by their very newness and complexity, do not allow as much experimental control as the study of simpler processes. Third, it may be that the specific operant men writing in this book present their views better than the representatives of the other school. Other explanations are possible. In keeping with a previous sports analogy, operant analysts, by refusing to recognize problem solving as a unique field may be scoring touchdowns while the more cognitively-oriented theorists are attempting to play

baseball. If such is the case, the whole question becomes: whose basic principles appear most appealing?

Staats (Ch. 10) seems sensitive to the criticism that operant analysis has not focused enough on complex learning. He points out that a response sequence may occur in which the response leads to a stimulus which elicits another response which leads to another stimulus, etc. His own research based on such a model will not be described here, but was one of the most informative features of this book. Skinner (Ch. 9) begins by attacking the famous cats-in-the-puzzle-box study of Thorndike. As you will remember from your Psychology 1 class, Thorndike concluded that "trial-and-error learning" occurred. Skinner feels that neither "try" nor "error" is a good term, for both fail to describe the consequences which bring about the response. What is really occurring is that various responses are being conditioned, extinguished, and otherwise following learning theory notions of what happens. By specific analysis of these micro responses, we can understand behavior, but not by assuming that trials have occurred resulting in errors. Skinner believes the latter Thorndikian view is too broad to be useful.

Why are some chess players of the master class, while others are inferior in ability? This kind of question is of concern to de Groot (Ch. 2), whose research indicates that the answer lies in the perceptual coding system of the masters. It is their perceptual ability which distinguishes them from the not-so-great chess players and not, for example, their ability to guess positions, which is equaled by the non-masters. One problem with this interesting chapter is that the reader who does not know chess will be in a difficult position in attempting to understand what de Groot is talking about.

A similar criticism can be leveled at other chapters which demand some knowledge on the part of the reader which many readers may not possess. At the same time, some of the chapters engage in very simple descriptions of simple concepts. The reader is thus faced with finding some sentences below his ability and some above, which makes for an uneven book at times. Another weakness of the book is the type. It looks as though the pages were photographed from a typewritten manuscript; this means that the appearance is not very aesthetically pleasing, and that the book is much shorter in content than it would ordinarily be with the listed number of pages, since there is more room between lines than ordinarily occurs in a book.

One of the real strengths present is the fine epilogue (Ch. 12) by Garlie A. Forehand, in which he summarizes the views of the authors. In some cases he does a better job of presenting the main point than did the author himself. All

in all, the book does not cover as much of the field of problem solving as the title would suggest, but if accepted with this limitation in mind, it is a volume of value. Closing on a note of regret, the chapters in the volume indicate little interest on the part of problem solving researchers with such related areas as creativity or personality. We surely live in the age of specialization when such can occur, but this means that the person who knows little about problem solving might do well to read some or all of this book.

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Copel, Sidney L. *Psychodiagnostic Study of Children and Adolescents*. Springfield, Ill.: Thomas, 1967, 201 pp.

This is a neat little handbook that this reviewer would surely recommend as one, but as only one text for a "graduate course in clinical procedure," (as mentioned on the dust jacket). It is by no means a complete Baedeker to the detection of childhood pathology, and it is hoped that the author will in due time come forth with an enlarged, more detailed version, written in the same easy-to-digest style.

The book discusses how to select a test battery, how to approach the child to be tested, what attitudes on the examiner's part are helpful or detrimental to the evaluation, and what to do about untestable children. It gives advice on the language, style, and organization of the written report. It then goes on to treat at some length six diagnostic categories which the author evidently considers highly important: deficits in the ego, anxiety hysteria, obsessive-compulsive reactions, self-destructive behavior, psychoses in childhood, and mental subnormality. There are 308 references in the bibliography. The appendix contains additional material of value to the diagnostician, for example, a sample psychological report, a sample referral form, nine informal projective questions, and a graded series of visual-motor tasks for young children.

The theoretical viewpoint of the author is psychoanalytic, and herein may well lie a weakness of the book. To many readers, the colorful hydraulic-volcanic terminology of psychoanalysis has come to sound simple-mindedly esoteric and unscientific. This is becoming increasingly pertinent with the rise of different conceptual approaches. The author compounds this psychoanalytic bias by somewhat lengthy historical introductions and theoretical expositions. Readers should be prepared to meet such expressions as "sudden eruptions from the id,"

"damming up of aggression," and "incorporated image of the phallic narcissistic mother," etc.

The contribution of the psychologist is termed "clinical evaluation," which synthesizes material taken from other disciplines with that gathered by himself. Unlike the "radiologist (who) has only his X-ray plates to consider, the psychologist . . . is trying to describe a life situation." This certainly is evaluation at its best, but would it not tend to "crowd" the other disciplines?

It is heart-warming to find the author recommend against a "technique" to create rapport, and instead urge the examiner to rely on his own sensitivity, patience, and respect for the child. Equally humane, for both examiner and child, is the author's attitude towards the rare occurrence of a stand-off: The child who simply refuses to cooperate. (Copel's advice: Drop the whole thing for the time being, and try again some other day. In the meantime, do not flagellate yourself.) Copel here might also have advocated yet another method, i.e., invite the parent in with the child. Mother is usually quite content to sit quietly in a corner, if told that you want to see what her child can do without her help. The author commendably continues his stand against "technique,"—as a memorized, routine procedure—with respect to the conduct of the whole evaluation interview, pointing out that the examiner's anxiety will eventually decrease with increased clinical experience.

One of the problems that the author does not refer to at this stage of the game is the always annoying one of having a child referred for "psychological testing," without additional specification from the referral source. Perhaps, this type of referral does not occur at the Devereux Foundation where the author is Administrator of the Psychological Clinic.

A rather large and important diagnostic category is not mentioned. This is the category variously labelled with such terms as: character disorder, delinquency, psychopathy, failure of socialization. He seems to be moving in that direction in his otherwise quite valuable chapter "Deficits in the Ego," but barely gets off the ground. Yet, this is a class of children that quite often turns up in psychological evaluations. The referral reasons usually have to do with stealing, aggression and cruelty towards other children, truancy, disrespect for authority, destruction of property and the like. The parents are often found to be less than adequate, inconsistent, with similar problems in their own childhood. The differentiation between "neurotic, anxious, inhibited" on the one hand and "acting-out, delinquent, hostile, defiant" on the other, is important as it is becoming increasingly recognized that psychotherapy works well for the former, while environmental manipulation, in-

cluding placement in more structured settings, works better for the latter.

The reader will be delighted by many astute observations of the kind all of us in this field accumulate over the years and which we are fond of passing on to our students in seminars. These bits of experiential wisdom give this book a warmth so often lacking in formal texts. Along this line there are some musings as to why it is that there are so few referrals of school age children with obsessive-compulsive problems, why "signs" generally do not predict, why the retarded child is more, rather than less, prone to emotional maladjustment, and how to refer for therapy without being insulting or condescending. ("Be kind," the author says, and he shows how.)

The diagnosis of brain damage in the child, a diagnosis that is made with increasing frequency, is not treated as a separate chapter, but rather is included under "mental subnormality." The author almost implies that mental retardation is invariably associated with CNS involvement. Of course, it is quite possible to have some symptoms of neurological disharmony (e.g., "minimal brain damage") without obvious mental retardation, which is one of the reasons why MBD is a ticklish diagnostic problem.

Finally, this reviewer would have liked to have seen included in this manual a discussion of some of the more recent tests, e.g., the Frostig, the Illinois Test of Psycholinguistic Abilities (ITPA) and the neuropsychological procedures of Reitan and Halsted, as well as more illustrative case material.

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Wiseman, Stephen. *Intelligence and Ability*. Baltimore: Penquin, 1967, 368 pp., \$1.95.

Intelligence has been a topic of special interest for students of human behavior from the days of the early philosophers to the present time. The author has contributed a book composed of carefully selected papers which were taken from the works of distinguished theoreticians and scholars. These readings cover a time span of over 75 years. Through skillfully organizing his book and pointing out the historical significance of each paper, the author has provided a degree of continuity which assists the reader in following the logical sequences in the development of modern concepts of intelligence. Beginning with excerpts from Sir Francis Galton's *Hereditary Genius* (1892), the author pre-

sents an impressive array of papers covering such subjects as "What is Intelligence?", the "Structure of the Mind and Nature vs Nurture." In the final part of his book he presents papers which tend to summarize current views in the cognitive field and suggest directions for the future. The excerpts which the author presents from J. McV. Hunt's brilliant work, *Intelligence and Experience* seem to speak eloquently for Wiseman and serve to summarize some of the salient issues presented in the book. In this part may be found references to relevant research findings which have led many contemporary psychologists to agree with J. McV. Hunt that "intelligence should be conceived as intellectual capacities based on central processes hierarchically arranged within the intrinsic portions of the cerebrum."

Stephen Wiseman takes the position that it is "unrealistic and misleading to think of man's intellectual gifts and capabilities purely in cognitive terms." He believes that ultimately we will achieve a more meaningful approach to the understanding of intelligence once there is a closer integration of learning theory with the theory of man's abilities and aptitudes. The author makes the point that there are basic differences between British and American psychologists in their conceptualization of intelligence. He states that "the British tend to see the structure of the mind as a hierarchy: general ability, g, subsumed by many group factors, each of which may be broken down into smaller elements. Thurstone and other American writers, on the other hand, conceive of the mind as consisting of a miscellaneous assortment of 'primary abilities'." Professor Wiseman, Director of the School of Education in Manchester, England, has made a convincing argument for the special contributions of the British psychologists and he states that the "final solution—if there is to be one—will lie nearer the British than the American line of thought."

This book is highly recommended for graduate students, academicians and researchers in the fields of psychology and education who need to address themselves to some of the theoretical issues and research in the area of intelligence. It is also seen as a useful reference book for psychologists and educators who are engrossed in assessing intelligence and may wish a fresh exposure to some of the assumptions on which their intelligence tests are based.

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Pines, Maya. *Revolution in Learning—The Years from Birth to Six*. New York:

Harper & Row, 1967. 244 pp. \$5.95.

"This book is addressed to everyone who cares about children and human intelligence. It is a passionate report on the discovery that we can produce more-intelligent as well as happier human beings by stimulating children to learn more during their earliest years."

Early in the book two current schools of thought are described: The Establishment group which "... believes in educating 'the whole child.' One should not try to teach specific skills in any organized sequence, but let the child learn from experiences that involve all aspects of his life. ..." The "cognitive" group, on the other hand, is convinced "... that by failing to take advantage of young children's real drive to know, the Establishment is wasting something very precious. Once past the sensitive period of the earliest years, children will never again learn with the same naturalness and ease."

Federally financed Operation Headstart is described as an offering of "social work, preventive medicine and indoctrination in the virtues of school." However, the program's Planning Committee included only physicians and traditionalists of the early-childhood education methodology, completely eliminating any representation of the cognitive approach to preschool education.

Among knowledgeable educators and psychologists, various names have begun to appear and reappear: among them Switzerland's Jean Piaget, J. McV. Hunt of the University of Illinois, and Lev Vygotsky. This group with its cognitive emphasis believes that "The child's intelligence grows as much during his first four years of life as it will grow in the next thirteen. During this period of extra-rapid growth, the environment exerts its most powerful effect." Benjamin Bloom, psychologist, cites the following evidence, based on more than a thousand different studies of youngsters: "The environment will have maximum impact on a specific trait during that trait's period of most rapid growth." Intelligence is not fixed at birth, but develops or regresses according to the selective stimulation of the environment.

At the Harvard Center for Cognitive Studies, Professor Jerome S. Bruner, director, "... is conducting computer-aided research on how newborns learn to correlate different perceptions." Bruner, a psychologist also, describes three ways in which children deal with information—"action first; imagery second; symbols third."

Revolution in Learning utilizes the remaining chapters to describe, competently and interestingly, various movements and experimen-

tal projects designed for the preschool population, which numbers 25 million in the United States.

Carl Bereiter and Siegfried Engelmann's "pressure-cooker" school at the University of Chicago stresses the importance of patterning drills, combined with manipulation of concrete objects, arm and hand movements. O.K. Moore's "Talking Typewriter" includes "... a slightly modified electric typewriter, dictation equipment, exhibition window (through which letters, words or sentences may be exhibited), a slide projector, a microphone, and a speaker." Each child's learning is separately programmed. There are no extrinsic rewards, and the child remains at the machine no longer than twenty minutes daily. Moore, professor of social psychology at the University of Pittsburgh states that "... In general, those who start younger, do better."

The relevance of the Montessori movement today is, as it was in the early 1900's, with children from the slums and urban renewal areas. Youngsters between the ages of two-and-a-half to five years work at their own pace, in a planned environment, with manipulative materials. Maya Pines reviews Maria Montessori's personal history, and the chain of events which led from a proliferation of Montessori schools in the United States between 1900-1920, through their sudden demise, into the revival of the methodology in the 1950's under the aegis of Nancy McCormick Rambusch. J. McV. Hunt calls Montessori's major contribution to early-childhood education "... her solution of 'the problem of the match': letting the child find out for himself what best matches his own particular interests and stage of development."

Other psychologists and educators reviewed in this book include: Dr. Martin Deutsch, Director of the Institute for Developmental Studies, New York; Dr. Susan Gray, Nashville, Tennessee; Dr. David Weikert, Ypsilanti, Michigan. The volume also delves into the ever-more-pressing problem of day care for children, whose mothers must be absent from the home throughout the day.

Maya Pines concludes by saying: "Research on early learning is expanding so rapidly that one can barely keep up with it. Though it remains anchored in the ideas of Piaget, Vygotsky, and Montessori, it is providing new models of its own. If we put enough energy, manpower, imagination, and money into it ... we can probably make the next generation of human beings far more intelligent than any that came before it."

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public schools. She has been trained in the Montessori methods and is a member of the American Montessori Society.

Semeonoff, Boris. (Ed.) *Personality Assessment*. Baltimore: Penquin Books; 1966, 443 pp., \$1.95.

Man's attempts to understand himself have in the past been based primarily on preconceived notions or common sense. In the past century there has been a concerted scientific effort to pursue the understanding of personality. Many different theories have been espoused and most of the theories have given rise to techniques or methodologies of assessing the dimension under consideration, namely personality.

Dr. Semeonoff's book of readings is a valuable selection of papers which deals with different approaches to measuring or classifying personality variables. Classification is, after all, basic to the scientific approach, and is probably the key concept in personality assessment. Rather than focusing on just one or two approaches to personality assessment, the readings in this book encompass a rather broad range of approaches in this area.

The nineteen articles included are not research reports or technical articles per se, but rather they tend to exemplify the different philosophies of personality classification and assessment, and the techniques that these philosophies engender, from both an historical and current perspective. The first five articles can be viewed generally as a sampling of historical and philosophical papers. Contained in this section are papers by Galton (on Mental Imagery as a relevant personality variable), a selection from Allport's book, *Pattern and Growth in Personality*, which issues a cogent plea for psychologists to focus attention on the "how" of behavior (expressive behavior) in addition to the "what" of behavior (coping behavior). Sheldon and Stevens classic article on morphology and personality types, along with a selection from Jung, describing his now famous introversion-extroversion continuum along with the four modes of experience are also included. Hilgard's paper which reviews some of the literature in the area of experimental psychodynamics rounds out the first group of papers. This last paper points out the fruitfulness of Freudian theory and illustrates some of the ingenious ways in which the theory has been put to empirical test.

The second group of papers is essentially operational in nature. That is, they exemplify some of the practices implied in the first group of papers. This section, which includes papers

on the O.S.S. Assessment Staff, and the operation of the War Office Selection Boards in England during World War II, describes the "global" or "organismic" approach. This approach, as defined by the O.S.S. paper tries to capture "the man in action" without breaking down behavior into elemental, component parts. The O.S.S. paper in particular presents a strong argument in favor of the organismic conception in personality assessment. Another valuable article in this section is the one by MacKinnon, dealing with the nature and nurture of creative talent. The article is a report of a six-year study conducted at the University of California (Berkeley) to determine some of the characteristics of creative people. One of the major findings indicates that those identified as creative are usually quite open to experience and operate very much on an intuitive level. The article also points out that creative students in various fields are often the most rebellious students and are usually independent thinkers, hence they are often those who are labeled "difficult to teach." Another paper in this section is one by Schafer, which addresses itself to the problem of intelligence testing, and how even in a rather circumscribed assessment situation, personality variables enter into the assessment situation. He discusses the controversial subject of scatter analysis (on the Wechsler-Bellevue) and argues for a utilization of intelligence testing as a non-projective personality assessment technique. One of the points he makes is that most intelligence tests depend heavily on the verbalization process, but that the process itself has not been fully and richly mined in terms of providing clues to relevant personality dimensions. This paper also stands as an introduction to the next group of papers which are concerned primarily with projective techniques. Included in this section are papers by Rorschach (his original publication on the application of the interpretation of form to psychoanalysis) which marks the beginning of projective psychology. Also included are articles by Rickers-Ovsiankina (Chapter I from her well known book on Rorschach Psychology), Morgan and Murray on the Thematic Apperception Test and a recent article by Arnold on sequence analysis in the TAT. She points out that recent trends in both research oriented and clinically oriented uses of the TAT have moved toward utilizing the action and outcome components of the stories as being more reflective of motivation than utilizing "fantasy" or "wish fulfillment" approaches. This section on projective techniques deals of course, with the two best known techniques (Rorschach, TAT) and the papers were selected so as to present the original formulation and current approaches to their use.

The last section deals primarily with the di-

mensional approach to personality assessment. This approach attempts to assign individuals to different places along continua of definable traits. Authors included in this section are Cattell (his article deals with the larger dimensions of personality structure as revealed through factor analysis), Eysenck and Rachman (on Dimensions of Personality), Hathaway and McKinley (on the MMPI), Edwards (on Social Desirability and Personality Test Construction), and an article by Vernon dealing with the concept of validity in personality assessment. There is also an interesting article by Luria and Osgood utilizing the semantic differential technique of concept analysis as applied to a case of multiple personality. Vernon's article is very appropriate as a concluding article to the book because it deals with the crucial issue of validity, the different types of validity and raises problems concerning the limitations of utilizing only actuarial procedures.

In sum the articles for this book were rather carefully chosen and they do represent a broad spectrum of approaches to personality assessment. The articles vary in terms of readability but that is to be expected in any selection of papers. The arrangement of the articles and the coverage of important topics in the field of personality assessment is excellent. What the book is lacking to a certain extent, is editorial comment, and the book might well benefit from expanded introductory material to the individual articles. The book should be found to be extremely useful as an adjunctive text to advanced graduate courses in personality assessment. It is also very worthwhile reading for clinicians who have become accustomed to a narrow range of assessment practices, for the book serves as an illustration of the fact that there are still many divergent roads that the assessor of personality may travel.

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Announcements

THE SEVENTH MENTAL MEASUREMENTS YEARBOOK

The Seventh Mental Measurements Yearbook is now being prepared for publication in the spring of 1970. Every effort is being made to include all tests published in the English speaking world. Tests available as separates, either commercially or

free of charge, are eligible for inclusion. Test authors are urged to submit specimen sets to: Oscar K. Buros, Editor, The Mental Measurements Yearbook, 220 Montgomery St., Highland Park, N.J., 08904.

SPRING BOARD MEETING

Denver, Colorado March 10, 1968

The spring Board Meeting of the Society for Projective Techniques and Personality Assessment was held on Sunday, March 10, at the Writers Manor Motel in Denver, Colorado. Members present were Barry Molish, President, Martin Mayman, Earl Taulbee, Kenneth Little, Walter Klopfer, Norman Farberow, Mary Harworth, and Marilyn Weir, the Society's Administrative Assistant.

The usual committee reports were read and accepted. Walter Klopfer reported that publication costs for the Journal will be increased by 10 per cent and suggestions were made for promoting more advertising in the Journal. Al Rabin has been appointed to fill the vacancy on the Editorial Board created by the sudden and untimely death of Paul Daston. The treasurer, Earl Taulbee, reported a current surplus in the treasury, but this will be absorbed by the increase in publication costs for the Journal.

The report of the membership committee was read and its recommendations were approved for 11 members and 3 associates. Four members were approved for Fellow status; five for life membership; and one former member was reinstated.

As chairman of the program committee, Ken Little announced that five symposia are being planned for the 1968 APA meetings, and Norman Farberow discussed the plans for a Post Doctoral Institute on projective techniques to be held for three days before the APA. There was also considerable discussion, and suggestions made, for increasing the co-sponsorship of papers by the society and its members at regional as well as national meetings.

The role of the Eastern and Western Representatives was also discussed at length, with consensus that their functions should be broadened so that they would

be responsible for stimulating active participation of the membership in the regional meetings. For instance, they should be placed on both the Awards and Program committees and each should have a sub-committee composed of representatives from each region in their area.

Earl Taulbee presented a preliminary draft of a Manual of Administrative Procedures which will detail the duties of

each officer and committee chairman. Each section was discussed in detail and many valuable suggestions incorporated under each heading.

It was decided to hold the fall Board Meeting on Thursday, August 19, at 7:00 p.m. in San Francisco.

Respectfully submitted,
Mary R. Haworth, Secretary

Journal of Projective Techniques & Personality Assessment

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Early Memories and Character Structure¹

MARTIN MAYMAN
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It has been traditional among psychoanalytically trained clinicians to look upon dreams and early memories as suspect clinical data. Psychoanalysis has repeatedly demonstrated that what seems manifest in dreams and memories may be illusory rather than real, contrived rather than true. Surface and depth are discontinuous, appearance and reality are not one, and the ways in which one experiences his world are unconsciously calculated to hide far more than they reveal. Freud several times went out of his way to caution psychoanalysts not to fall prey to the seductive meanings apparent in the manifest content of experiences, because such surface meanings will only divert attention from the more valid unconscious meanings of those same events. In the interest of finding his way back to the unconscious dream thoughts that are masked by the manifest dream content, Freud insisted that dreams be analyzed only by the psychoanalytic method, that is, the gathering of free associations and the unraveling of dream distortions.

His demonstration of the "concealing" or "screen" function of memories, perception and dreams (Freud, 1899, 1901) was one of the most important of Freud's clinical discoveries in that period of the history of psychoanalysis when the dynamic unconscious was being uncovered by painstaking analytic work. The "screen" metaphor has been a productive one in clinical psychoanalysis not only to describe screen memories, but also screen affects (Lewin, 1950), the dream screen

(Lewin, 1946), screen defenses, screen hunger, and screen identity (Greenson, 1958).

However, with the advent of psychoanalytic ego psychology, and in its wake projective testing and the projective hypothesis, the screen function of consciousness came to take on a double meaning. Perceptions, fantasies, random thoughts which served the ego's countercathetic purposes, were seen to carry traces of the unconscious contents they were intended to mask. Like any good disguise, surface appearance represents a skillful blend of the camouflaging design and the images one wishes to hide.

In the fifty years which have elapsed from the time when psychoanalysis was largely an id-psychology, we have come to see that the distrust of manifest content is appropriate only in the context of an id-psychology. Today it is as important to the psychoanalyst to know about the ego, its designs, its ways of maintaining repression, as it is to know about that which is repressed. And, just as the latent content of conscious thought processes reveals much about the vicissitudes of the id, the manifest contents of these experiences reveal much about the workings of the ego.

One can find an abundance of evidence in recent psychoanalytic writings on dreams to support this claim (Babcock, 1966; Beck and Ward, 1961; Erikson, 1954; Noble, 1951; Richardson and Moore, 1963; Roth, 1958; Saul, 1940; Sheppard, 1963). Similar findings with childhood "screen" memories are fewer in number but promise to parallel in every respect the successful use of manifest dream content in identifying important trends of the personality (Eisenstein and Ryerson, 1951; Mayman, 1959; Mayman and Faris, 1960; Langs, 1965; Saul, Snyder, and Sheppard, 1956). The strongest such assertion was made by Saul, Snyder, and Sheppard (1956): "Earliest memories

¹ Presidential address, Society for Projective Techniques, September 4, 1967, Washington, D.C. One of a series of studies on the use of early memories in clinical assessment carried out under the auspices of the Psychotherapy Research Project of the Menninger Foundation, currently supported by the NIMH, Grant number MH 8308. The work of the project was previously supported by the Foundations' Fund for Research in Psychiatry and by the Ford Foundation.

are absolutely specific, distinctive and characteristic for each individual; moreover, they reveal, probably more clearly than any other single psychological datum, the central core of each person's psychodynamics, his chief motivations, form of neurosis, and emotional problem. This is the empirical, observable fact. . . . Because of their nature, earliest memories have a diagnostic and prognostic significance equal to that of the first dream of an analysis. They provide a clue to habitual emotional attitudes which are still operative and so illumine in advance the therapeutic problem, how these patterns will emerge, and how they will have correspondences in the analysand's life and in the transference."

I shall review here neither this body of literature on manifest content of dreams and memories, nor will I present any new research data. Nonetheless, I hope to make a convincing case for a set of working hypotheses about early memories which have proved productive to myself and my students in our clinical practice. I hope to be able to show that early memories are not autobiographical truths, nor even "memories" in the strictest sense of this term, but largely retrospective inventions developed to express psychological truths rather than objective truths about a person's life; that early memories are expressions of important fantasies around

which a person's character-structure is organized; that early memories are selected (unconsciously) by a person to conform with and confirm ingrained images of himself and others; and that the themes which bind together the *dramatis personae* of a person's early memories define nuclear relationship-patterns which are likely to repeat themselves isomorphically in a wide range of other life situations. In short, I propose that a person's adult character structure is organized around object-relational themes which intrude projectively into the structure and content of his early memories, just as they occur repetitively in his relations with significant persons in his life. Consequently, one may sift the stories a person tells about himself and extract those intrusive interpersonal themes which define that person's enduring view of himself and his enduring expectations of others.

Though Alfred Adler is generally credited with the discovery that early memories are allegorical representations of a person's life style (Ansbacher, 1947), it was actually Freud (1910) who first introduced this idea in one of his papers on screen memories which provides us with the most suggestive rationale for this way of viewing early memories. In analyzing Leonardo da Vinci's earliest memory of a vulture swooping in out of the sky and perching on his bed, Freud argued that this was not a real memory, but a fantasy,

"a fantasy which Leonardo formed at a later date and transposed to childhood." . . . "This is often the way in which childhood memories originate. . . . They are not fixed at the moment of being experienced and afterwards repeated, but are only elicited at a later age when childhood is already past. In the process they are altered and falsified, and are put into the service of later trends so that, generally speaking, they cannot be sharply distinguished from fantasies. . . . Their nature is perhaps best illustrated by a comparison with the way in which the writing of history originated among the peoples of antiquity. As long as a nation was small and weak it gave no thought to the writing of its history. Men tilled the soil of their land, fought for their existence against their neighbours, and tried to gain territory from them and to acquire wealth. It was an age of heroes, not of historians. Then came another age, an age of reflection: men felt themselves to be rich and powerful, and now felt a need to learn where they had come from and how they had developed. Historical writing, which had already begun to keep a continuous record of the present, now also cast a glance back to the past, gathered traditions and legends, interpreted the traces of antiquity that survived in customs and usages, and in this way created a

history of the past. It was inevitable that this early history should have been an expression of present beliefs and wishes rather than a true picture of the past; for many things had been dropped from the nation's memory, while others were distorted, and some remains of the past were given a wrong interpretation in order to fit in with contemporary ideas. Moreover people's motive for writing history was not objective curiosity but a desire to influence their contemporaries, to encourage and inspire them, or to hold a mirror up before them. A man's conscious memory of the events of his maturity is in every way comparable to the first kind of historical writing (which was a chronicle of current events); while the memories that he has of his childhood correspond, as far as their origins and reliability are concerned, to the history of a nation's earliest days, which was compiled later and for tendentious reasons."²

My own data on early memories confirm in every respect this succinct summary of their nature by Freud. I had occasion a few years ago to collect early memories from a group of ten, eleven, and twelve-year-old children. The twelve-year-olds gave stories about themselves much like one hears from adults. Some of the ten-year-olds on the other hand didn't seem to understand what I meant by "early memories." They didn't seem to be far enough along in the process of consolidating a stable identity with its fixed past and predictable future to be able to tell me some of the personal myths out

of which they would later construct their past.³

I had the opportunity to get a glimpse of this process of early memory formation in the recollections of one nine-year-old child, a sober, diffident, subdued boy, who was obviously depressed. When asked for his earliest memory, he told me, without hesitation, "I remember when I was born." Undaunted, I pushed on and established that, as usual, the memory was recalled in the form of a visual image of a particular scene. I asked him to tell me specifically what he saw in this image of his own birth. He pictured a scene, the nursery of a hospital delivery ward. He saw it as if he were looking in through the large glass window. There were rows upon rows of bassinets, each with its own little newborn baby. One of those was himself, he didn't know which. As he told the story, one was struck by the apartness of these children; there were no adults present; nothing was going on; and all of them were separated off from the viewer by a glass screen. He himself was identityless, anonymous, in an impersonal world devoid of familiar human values. It is hard to convey here the pathetic way in which he conveyed this image. There was a brief pause, and he then volunteered another memory of himself as a newborn baby. He was lying on a table, and could see himself "all red and wrinkled up like an old man." The equation of birth with the shrivelling up of old age accentuated the sadness of the first "memory" he had told.

This boy was convinced that these were his earliest memories. This is how

² This is a provocative view of the purpose of writing history. We sometimes laugh at countries which rewrite their history books to fit with major political trends. But this only does openly what history books in all countries do tacitly without quite realizing it. A prime purpose of writing history, at least history as taught in grade schools, is to instil in children an ideology, to give them a common set of myths to live by, to choose for them the kind of heroes with whom to identify, and to embody in the legends of their culture the values on which their group identity rests. It is therefore entirely appropriate, or at least understandable, that the American view of the American Revolution, for example, be quite different from the English view. The history of the revolution for Americans is a very selective report of what happened, in order to establish for Americans as a group one of the important landmarks in the development of their group identity.

³ This preliminary finding will soon be put to more careful test, to determine whether the introduction of a historical dimension in one's self-definition does indeed occur at that point in life which marks the end of childhood and the beginning of adolescence.

life started for him. I suspected from the mood and content of these two stories what their source may have been, and asked him whether there had been any birth in the family in the last few years. Sure enough, a sister was born the year before. He was eight at the time. Until her arrival he had been an only child. We can conjecture what may well have happened to this boy a year before, when his special position in the family was disrupted and would never again be the same. From his appearance at the time he was tested, one would suspect that his reaction to the parents' sudden, inexplicable interruption of interest in him was to withdraw and nurse his wound in silence. But he surely listened intently to the talk about the new baby and the hospital. Perhaps he asked about the newborn baby, its looks, its whereabouts. Perhaps he was even taken up for a glimpse into the maternity ward despite the rules against this. Surely he spent a good deal of time thinking of the new baby, the fuss being made over her, and wondering about his own birth. His mood of desolate aloneness left its indelible mark on the images and fantasies he formed of his own birth. It remained only for him to attach to these images the feelings that they were *real* experiences and they were his *own* experiences for them to become "early memories." These images, these so-called early memories, became cards of identity, and served to represent for him the psychological truth which had become the dominant theme of his life. His depressive isolation seemed well on the way to becoming a fixed affect-state and the nucleus for the premature consolidation of a depressive character structure.

It is likely that most early memory formation follows much the same course, that from hearing about or thinking about an event, to visualizing that event in one's mind's eye, and finally to investing that image with a feeling of actuality and of "me-ness" which makes it seem to be a *real memory* rather than a mere fantasy. Once that last step is taken, it is difficult for most people to believe subsequently that their own early memories really derive from stories, or images, or fantasies as much as they do from fragments of

real experiences. One takes his early memories for granted, and is inclined to balk at the suggestion that they never really happened to him the way he remembers them happening, if indeed, they ever really happened at all. That special feeling which identifies early memories as both familiar and real is, nonetheless, no more than a feeling, and as Federn (1952), Claparede (1911), and others have shown, it suffers the same vicissitudes as do other feeling states. The feelings of familiarity, of actuality and of me-ness are displaceable, for example, as we know from *de ja vu* experiences. We less often recognize that the displacement is a two-way process, and that events invested with these feeling-qualities can suddenly be divested of them, as in *jamaïs vu* and other estrangement experiences (some of which can be artificially induced, as for example, in satiation experiments). Images and fantasies are far more often personalized into early memories than early memories are depersonalized into ego-alien images. But the latter process does occur. I had occasion once to test a young woman with total amnesia. She had no memory at all for anything prior to the morning of her arrival on the bus a few days before in this strange town. Since she could remember no early memories nor anything else about herself, I asked her to make up stories which *might* be early memories, stories she could imagine telling me *if* and when she remembered who she was. She entered into the spirit of this game with enthusiasm and no little imagination, I thought. She told stories about her early years in an orphanage, her brother, her parents (whom she thought of as alive despite the fact that she was in an orphanage). All of this was recounted with frequent disclaimers of, "Isn't this wild!" and I confess, it did seem pretty fanciful to me. A week later, when she recovered her memory, we learned that these stories which she thought she had made up out of whole cloth were true and corresponded closely to her non-amnesic early memories. During the two-week period of her amnesia, however, she could call up these images of herself only after dissociating them from any feelings of actuality or "me-ness." She could think of these events only by

convincing herself they had never actually occurred.

These are, I admit, unusual examples. How valid is it to say of virtually all early memories that they are artifacts, visual fragments drawn from personal anecdotes, fantasies, photographs, and bits of real experience, transformed into "memories" by investiture with that special feeling-quality which distinguishes real from hypothetical events? It is, in fact, possible to demonstrate that virtually all early memories, which are so blithely taken for granted, could not have been experienced in the form in which they are remembered. One need only carry out a fairly simple inquiry. If one asks whether the memory occurs as a scene one imagines visually, the answer is almost always yes. If one then asks whether the informant appears as one of the figures in that scene, one learns that in more than half of all early memories the person *sees* himself as a little child as if he, the child, were another person and he, the observer, were looking on from some point away from the center of action. Moreover, the scene is often viewed from above, or from outside a window looking in, or from some other equally unlikely or impossible vantage point. One can imagine the event in that way, but surely the scene was never experienced that way in actuality. The memory is of a *reconstruction* of a real or a fantasied event rather than the re-experiencing of a *living* event. Even in those less common memories where the person says he *feels* himself to be present, and sees the scene as if from where he was standing at the time, one need only ask him from what eye-level he sees the people and things around him and how large they appear, to determine once again that he does not experience that scene as he would have at the age when the event is said to have occurred; he visualizes the setting as it would appear to him at an older age, or perhaps even as he would now view them as an adult.

There *are* some rare early memories in which an event is relived rather than merely recollected or reconstructed. Emma Plank (1953) has collected a number of these from autobiographical accounts of creative men; all are reminiscent of

Proust's remembrances of things past. Their contrast with the garden variety form of early memory is easily demonstrated. Some years ago a writer who was gathering material for a popular article on the nature of memory recalled his own earliest memory. This went back to a year and a half or two years of age, and was of himself being carried and sung to by his grandfather. It was a highly cathected memory, but nonetheless one in which he experienced it as the detached observer looking on. He *saw* himself rather than *felt* himself in the arms of his grandfather. Suddenly, the memory changed. The visual image gave way to a wealth of other impressions. He could recall what he felt like as that child, the sensation of being carried, even the smell of the grandfather and the sound of the grandfather's voice humming the melody of that song. It was a fleeting moment, but in that moment the usual, more familiar, more detached memory reverted to its original form and became a living recall of that event.⁴

If we are moved by such considerations to take the most extreme position regarding early memories, we would come to view all early memories not as autobiographical, factual reports, but rather as "personal myths" (Kris, 1956a; 1956b), that is, as inventions which may have little or no relevance to actual events but great relevance to the personal themes which affect the way a person experiences events. Given this assumption, we are free to analyze early memories as projected fantasies, much as we now analyze TAT themes. Not infrequently, I have found the thematic analysis of a patient's early memories one of the more useful sources of information about his relationship predispositions—his capacity for forming ob-

⁴ The difference in quality and in emotional impact which distinguishes these two radically different forms of early memory has a direct bearing on the theory and practice of psychotherapy. Some intellectualizing patients work hard at "remembering," but limit their recollections largely to more or less affectless pictorial reconstructions, and maintain in that way an effective resistance against emotional confrontations they are not yet prepared to face. Freud (1914, 1938) discussed this issue at length in two important papers on psychoanalytic technique.

ject-relationships, the psychosexual level at which he is prone to define his object-relationships, and some of the major transference resistances he is likely to introduce into his treatment. In the little time which remains for this presentation I shall limit myself to a few brief illustrations.

These two earliest memories were told by an adolescent girl:⁵

I had a little white kitten that I had found and was taking care of. Mother wouldn't let me keep the cat in at night. I remember this very cold night, it was snowy and icy outside. I begged her to let the cat stay in but she didn't even listen to me. The next morning when I woke up and looked out the window, the cat's guts and blood were all over the street. It had been run over during the night.

Another time I came home sick from school. I had such an awful pain in my stomach, I was doubled over and couldn't stand up. It hurt me so badly I thought I was going to die. She just laughed at me and kept telling me it served me right for eating all that candy when she told me not to.

There were no representations of a good mother in her set of twelve early memories.⁶ In fact, all of the really early memories of mother had been wholly blotted out; both of these memories were placed at 7 or 8 years of age. This girl's almost nightmarish inversion of the more normal image of mother; her feeling that she was at the mercy of a woman who was less like a mother than she was

like a fairy-tale version of the evil witch or the cruel step-mother; and, by implication, the girl's enduring sense of impotent rage at this mother who makes such a mockery of the nurturant care the girl so much craved, all imply severe pathology in the expectancies she carries with her into any and all potentially nurturant relationships. These and her other early memories are representative samples of an

inner world in which she experiences object-ties as empty, predatory and cold-blooded.

The presenting symptom in this case was murder. The girl had killed her mother by feeding her poison, and watched her die writhing in pain, laughing at her mother all the while, just as the mother allegedly laughed at her in her earliest memory. The kitten memory was reported after sentence had been passed, during the initial intake interviews at the state hospital where she had been confined. The stomach-ache memory was not recalled until two and a half years later, after two years of psychotherapy.

The next two memories were told by a 20-year-old boy during an intake evaluation prior to his hospitalization.

⁵ Some of the biographical data in each of the case examples used below have been altered to insure anonymity, but I have tried to leave the essential features of the patient's life, symptomatology and character structure undistorted.

⁶ I've made a point of eliciting early memories much like one does TAT stories, i.e., not in
(Continued next page)

Don't know how old I was. It was at the age when they have these little toilet seats they fit on toilets for kids that would fall in otherwise. And . . . I go to the bathroom. Instead of putting the toilet seat on, my mother held me up. I was feeling scared about it, afraid I was going to fall in. Another that sticks in my memory—My brothers and I were playing in the basement. They were going to play I was the bad guy and they were going to punish me by shoving me in the furnace. I sat on the cement floor. They were going to scoop me with a shovel. It hurt quite a bit, pinching. And I started to cry and the game broke up.

This was how the patient experienced himself in two self-projections onto the screen of his memory. The faint allusions to such primal dangers as being sucked up into a gaping hole, or thrown into the jaws of a furnace showed how natural it was for him to view events in essentially oral-incorporative terms. Equally striking, and consistent with such incorporative relationship paradigms, is the inertness, the passivity with which he lets himself be victimized, and his clinging dependence on others to rescue him from pain or threats. Every aspect of his memories suggest a limpness in the face of adversity which did not bode well for success of the treatment.

This young man was brought to the hospital by his parents who were growing tired of supporting him psychologically, economically, and socially. He was a confirmed narcotics addict, had never worked except for a few odd jobs in unknown jazz combos. There had been some petty bad-check writing, which his parents made good for him. He had drifted into an impulsive marriage with a chronologically immature and psychologically infantile girl, whom he moved into the parental home after the marriage. He indulged in grandiosely unrealistic fantasies about his prospects, while at the same time his actions created in others the impression of ineffectualness, weakness, and worthlessness which called to mind the veiled parallels he drew in his early memories between himself and a lump of feces or a shovelful of dirt. His treatment was marked by pathological lying, all directed at denying his impotence to cope with any of the

exigencies of life. He soon induced his indulgent parents to rescue him from the discomforts of treatment, as they had rescued him from previous difficulties when he cried out convincingly enough for help.

It is of parenthetic interest to note the similarity between this earliest memory and the earliest memories of three patients of Martin's (1959), all three reported memories of being held over a body of water and feeling terrified that they would be dropped. The implicit fear of losing control and being inundated was far from groundless. All three needed to be hospitalized in the course of treatment, two for schizophrenic episodes, and the third to help him control his drinking, his bad check writing and his fear of becoming psychotic. As with my patient, self-representations which depict the ego as helplessly vulnerable in the face of primal threats to survival, proved to be prognostic of severe ego weakness.

The themes around which people build their retrospectively convincing views of life as they lived it, run the gamut from such archaic themes to some quite mature forms of object relation. A distribution of themes implicit in early memories, collected more or less randomly from normal, neurotic, borderline and psychotic subjects, is summarized in Table 1, and illustrates the variety of "oral," "anal," "phallic," and "genital" self-representations and object-representations which commonly appear in early memories. The psychosexual terms are meant to designate developmental phases from which the relationship paradigm is drawn, rather than to refer to the more narrowly instinctual meanings of these terms as used in a psychoanalytic id-psychology. As used here these terms define a multiplicity of different ego-states, each organized around a distinctive affect and self-experience, and made up of a definitive need, a need-appropriate object-relationship and self-representation, and phase-appropriate conflicts, defenses and compromise formations, and ego-competencies. Implicit in an ego-state may be oral, anal, or phallic impulses but these impulses become accessible to the ego (and to the therapist of a patient) not in id-terms as raw im-

freely ranging, free-association fashion but as a set of stories one is prepared to tell about himself in childhood. I regularly ask for and record verbatim the earliest memory; the next earliest memory; the earliest memory of mother; the next earliest memory of mother; the earliest of father; the next earliest of father; the happiest earliest memory; the unhappiest; and stories the family tell about the subject as a child, whether or not he himself remembers the incidents. When time permits I ask too for the "most striking" or "most special" early memory; the one in which the subject felt most fully himself; for an early memory that brings back the feeling of anger; of snugginess; of fear; of thrill or excitement; and the feeling of shame or guilt.

pulses, but by way of ego derivatives including, most importantly, such ego-states (Mayman, 1963). Implicit in all the "oral" themes listed in Table 1 may be a primal hunger for nurturant supplies, an oral hunger which was once experienced by the person in its most archaically literal sense, but the primal oral wish appears in the memory only in its derivative form, as the product of an ego which itself carries the imprint of prior life experiences.

Early memories organized around the oral-paradigm depict what the informant's ego and superego have made of the primal wish, rather than that wish itself. Whether the themes express oral optimism and the sense of basic trust, or oral misanthropy and mistrust, they refer to derivative states, adaptive or defensive positions taken by the person toward the still salient, still unfulfilled oral need.

Table 1 A
Prototypical Interpersonal Themes
in Early Memories

I. "Oral" configurations

1. Themes of basic mistrust:

Oral
Pessimism

- a. Danger of personal extinction by abandonment, starvation, suffocation, being swallowed; sense of engulfing evil and impending doom. (Reminiscent of M. Klein's "paranoid position.")
- b. Bleak, empty aloneness; anaclitic depression; themes of getting lost, being sent away from home more or less permanently, death of parents; themes of traumatic separation and of depression verging on despair. (Reminiscent of Melanie Klein's "depressive position.")

2. Deprivation or insufficient supplies of attention, food or love: oral pessimism, dissatisfaction, bitter resentment, sense of unfulfillment (rather than of despair as in I.1.).

- a. Temporary separation from others: parents are off by themselves and not aware of the child; child is sent off to school or to other relatives; feeling left out of some adult activities; all of which give rise to a poignant sense of not belonging.
- b. Other themes of deprivation: insufficient supplies of comfort, reassurance, love, attention, care or food; dissatisfied with one's lot.
- c. Loss of some treasured object.
- d. Suffering an unpleasant or dangerous illness.

3. Aggressive reactions to deprivation or frustration: demanding or grasping need-supplies rather than merely yearning for them as in I.2.

- a. Suffused with impotent rage.
- b. Greedy hunger for what one does not have: taking and holding onto, appropriating by snatching away, grasping, or biting.
- c. Resentment—and/or malicious treatment of—younger sibling.
- d. Meets with punishment, criticism or "accidental" injury as a direct consequence of oral-aggressive behavior.

4. Gratification themes: sense of snugness, security, basic trust, expectation of fulfillment; sense of personal worth; availability of external comforts and supports.

Oral
Optimism

- a. Snug pleasures of sleep, bed, breast, bath, food, or physical closeness.
- b. Comforting care during an illness.
- c. Close comforting attentive presence of mother or mother surrogate. (Father may fill this role at times.)
- d. Receiving gifts as proof of love with ensuing sense of warmth, belonging, and fulfillment.

- e. Being helped by an adult to learn to look after oneself, e.g., being taught one's name and address, how to tie one's shoes.
- 5. Gratification themes with a reversal of roles so that one becomes the giver rather than the recipient of nurturant care.
 - a. Taking the nurturing parent role toward a younger sib, pet, friend or sick parent.

II. "Anal" Configurations: Self-Differentiating Relationship Paradigms

- 1. Retentiveness: willful stubbornness, defiance, passive-aggressive noncompliance.
 - Passive a. Withholding from adults; sulking.
 - Aggressive b. Defiance by refusal to comply with adult's requests—including food fads, refusal to eat, refusal to go to bed.
 - c. Passive aggressive "inability" to produce what is asked for or expected by adults.
 - p. Meets with punishment, ridicule, or attack upon one's self-esteem by a superego-figure due to one's retentive behavior.
- 2. Expulsiveness: hurting self or others by dirtying them or treating them like dirt.
 - Hurting Self a. Insufficient sphincter control (usually with memory of shame, guilt or punishment); other forms of being dirtied or feeling oneself to be unclean.
 - b. Being the object of vilification; being treated by other "like shit."
 - Hurting Others c. Defiance by vilification, spitting, demeaning others, throwing things (especially rocks, dirt or mud); treating others "like dirt" or extruding others by pushing them away or keeping them at a distance.
 - p. Meets with punishment, ridicule, or other injury to one's self-esteem due to one's extrusive-aggressive behavior.
- 3. Sublimations or reaction formations:
 - a. Doing what one is supposed to do, avoiding conflicts with coercive parents.
 - b. Attention to cleanliness, cleaning up, being clean.
 - c. Preoccupation with one's own or another's possessions, with emphasis on quantity, orderliness and ownership.

III. "Phallic-Intrusive" and "Phallic-Locomotor" Configurations: Pleasure in Mastery; Pleasure in Proofs of One's Prowess, Strength or Competence

- 1. Active forms:
 - a. Expressing initiative, independence or eager curiosity; going off on one's own, wandering away to explore one's surroundings.
 - b. Boisterous play usually with peers; vigorous activity including physical attack; mischievously teasing play.
 - c. Active use of "phallic-locomotor" conveyance, with emphasis on the vehicles which carry one to adventures and new places; riding a bicycle, riding a horse, going on a trip. (Being taken for a drive should be listed as III. 2b.)
 - d. Competitive games: enjoyment of competition, pleasure in conquest, insistence on asserting one's dominance over people or impersonal obstacles (to be distinguished from the "greedy hunger" of I. 4c). Proving one is not inferior—being as good as someone else.
 - e. Identification with father; admiring father and wanting to be like him, to use his tools like him, to fix things as he does.
 - f. Setting fires and enjoying the ensuing excitement.
 - p. Any of these activities culminating in physical injury, narcissistic insult or physical punishment.
- 2. Passive forms:
 - a. Passively watching large moving vehicles or other wondrous objects; watching fires (but not setting them); watching the feats of others.

- b. Being taken for a ride by an adult.
 - c. Being teased, being tossed about playfully by an adult, or carried by father in horse-and-rider play.
 - d. Admiration and envy of phallic objects of others (symbolic or real); disappointment and unfavorable comparison with one's own phallic object or prowess; yearning to do as well as one's ego-models.
 - p. Any of these activities culminating in injury, narcissistic insult, or punishment.
3. Being the object of a phallic-aggressive assault.
- a. Being knocked down and overpowered by brute strength; fantasy of being whipped or beaten.
 - b. Fear of dangerous, brutish creatures (including ghosts and bogey-men).
 - c. Being shy, timid, fearful of exercising initiative.
 - d. Themes of physical injury: actual injury to the genitals, symbolic castration themes.
 - e. Being hurt physically by a doctor; tonsil or other operation on body members.

IV. "Phallic-sexual" Configurations: Activities which are Frankly Sexual or Veiled but Recognizably Sexual in Nature.

1. Intrusive forms: moving outward to make contact with sexual object.
- a. Playful, sexually-tinged curiosity or exhibitionism; sex play or secretive, sexually-tinged play with peers; interested examination of the sex organs of others but only as a "passive bystander."
 - b. Proud or excited self-display, usually sublimated in dancing, singing or performing in some other manner before an audience of potential admirers. The accent here is on *doing* something to win favor, not *standing by, waiting or expecting* to be admired as in IV. 2b.
 - c. Shame or embarrassment rather than pleasure following intrusive self-display.
 - p. Intrusive sexual activity leads to physical injury, narcissistic insult, or physical punishment.
2. Inceptive forms: trying to excite a sexually desired object to make a frank or veiled sexual approach.
- a. Being fetchingly coy, seductive; trying to make oneself attractive and endearing; teasing others in a sexually provocative manner.
 - b. Pleasure in one's appearance; attention to pretty clothes, attractive grooming; pleasure in being looked at, noticed, admired or photographed.
 - c. Shame or embarrassment rather than pleasure following inceptive self-display.
 - p. Inceptive sexual activity leads to physical injury, narcissistic insult, or physical punishment.

V. "Oedipal" Configurations: Competitive Striving to Win Favor With a Love-Object

1. Male relationship patterns:

Hostile
Competitive

- a. Jealousy or rivalry (with father or a sibling) for the affection of mother or a mother surrogate; interest in mother's doings with another male.
- b. Failure to win mother's love, often accompanied by self-blame for one's personal inadequacy.
- c. Resentment or fear of the father as an overt or tacit rival for mother's love.
- d. Conflict between parents in which the child sides with the mother and rejects the father; angry at father for hurting mother.

Positive
Harmonious

- e. Denial of Oedipal conflict by stress on the warm, harmonious relationships with both mother and father.

- f. Doing things with mother which are pleasurable and exciting, with the father tacitly excluded.
- g. Pleasure in bringing mother a phallic gift.

2. Female relationship patterns:

- | | |
|------------------------|--|
| Hostile
Competitive | <ul style="list-style-type: none"> a. Jealousy or rivalry with mother or a sibling for the affection of father or a father surrogate; interest in father's doings with another female. b. Resentment or fear of mother as an avowed or tacit rival for father's love. c. Failure to win father's love, with accompanying sense of personal inadequacy. d. Conflict between parents in which the child sides with father and rejects the mother. |
| Positive
Harmonious | <ul style="list-style-type: none"> e. Denial of Oedipal conflict by stressing the warm, harmonious, non-competitive aspects of one's relationship with mother in the family triangle. f. Doing exciting or pleasurable things with father, with mother tacitly excluded. g. Interest in having a baby as mother did; or receiving some symbolically equivalent phallic gift from father; interest in pregnancy and childbirth. h. Playing house, playing with dolls, dressing up in mother's clothes, or in some other way doing as mother does. |

VI. "Latency" Configurations: More Sublimated Peer-Group Activities

1. Productivity and positive self-esteem.
 - a. Socialization with peers; group play with well-differentiated roles.
 - b. Industriousness, learning to do things, constructing and planning with others in a common endeavor.
 - c. Turning manipulative skills to creative accomplishment.
2. Inferiority:
 - a. Withdrawal from, isolation in, or rejection by one's peer group.

Table I B
Clinically Meaningful Aspects of
The Analysis of a Set of Early Recollections

Relationship Paradigms

1. To what extent does one represent himself as living in lonely isolation? In close interaction with others? How wide a range of relationships comes spontaneously to mind? To what extent do mother, father, other family members, and friends, "people" the patient's intrapsychic world?
2. What forms of relatedness seem most congenial, most ego-syntonic, easiest to maintain?
3. What is the quality and intensity of feeling implicit in these relationships? What is the "level" of relationship—impersonal? anacletic? imitative? mutual?
4. Is there evidence of particular psychosexual paradigms serving as models for interpersonal relationships? Evidence of preferred psychosexual positions to escape from other more dangerous positions?

Coping Style

5. Does the patient represent himself as active or as passive in his relationships? If active, how? compliant? courageous? venturesome? defiant? autonomous? assertive? self-sufficient? If passive, what form of passivity? timid? self-abasing? compliant? limp? "feeling" and "watching," rather than "doing?"

Self-structure

6. Where is a person's "self-feeling" most fully invested? In which modalities of experience? sensual? kinaesthetic? affective? introspective? extroceptive? What

forms of activity does the person readily invest himself in, and in which can he not invest himself?

7. What kinds of life-experiences seem ego-syntonic and which, by exclusion, ego-alien? Which qualities of experience remain split off from the self? Which threaten to disorganize the sense of self (i.e., are not only estranged but bring on some depersonalization)?

Images

8. What are the principal representations of mother, father, and self? What is the principal representation of the self in relation to others? In what roles are the significant-others cast?
9. Are there traces of multiple or conflicting representations of significant-others and of oneself?
10. Which self-representations seem to have been encouraged or fostered by the parents? Which seem to have been incorporated into the ego-ideal?

Defense Modes

11. To what extent do "primal" or archaic memories occur?
12. To what extent is there a masochistic fixation upon fears, disappointments, dangers, injuries, pain, or illness?
13. How much repression do we encounter? To what extent does the patient feel himself cut off from his infantile origins, i.e., early sources of pleasure and early object-ties? How vague or nebulous are the memories? How selective is the memory process?
14. What defenses other than repression appear in the way in which the story is told? isolation? reaction-formation? projection? denial?
15. To what extent are memories phobic? depressive? self-punitive? counter-phobic? withdrawn? conflict-avoidant? shallow? self-preoccupied? warm and human?

A fairly typical example of the paradigmatic value of early memories for the diagnostic analysis of character structure are the earliest memories told by a forty-five year old, childless, married woman who had decided to seek psychiatric help when spells of tiredness, lassitude and incipient depression grew increasingly incapacitating at home and at work.⁷ She had spent most of her life, and most of

her energies in a career as a rehabilitation worker in a hospital for crippled children. She had been a key figure in developing a professional organization of rehabilitation workers in her state, and was still one of its leading lights. At eighteen, she married a pleasant, passive, unambitious man who neither encouraged nor interfered with her professional activities. They remained childless and the patient worked throughout her marriage.

Two paragraphs from her psychological test report describe some of the patient's emotional state and character structure at the time she came for examination.

⁷ This example is drawn from a previous report of this same data and was discussed at greater length in that paper, (Mayman, 1963) which is not easily accessible to most readers.

Depression is as prominent in this patient's test performance as it is clinically, but even when the patient was at her worst, she did not seem to give in to her depressed feelings. Rather, she criticized herself for every failure, corrected her mistakes and insisted that she would have to do better. . . .

Her compulsiveness was even more impressive when as testing went on the depression receded. The emphasis on making demands upon herself, the unwillingness to tolerate any weakness or failure in herself, and the inability to allow herself to express or even to experience angry feelings took clearer and clearer shape. Whatever happened she tried to brush off, or at least isolate off any resentful feelings she may have had. Severe reaction formations against her angry feelings were integrated into a self-

image (and ego ideal) of a person whose life is spent in the service of others in an austere world of stern duties, values and standards. It seems clear that her ego has become thoroughly fused with a severe, uncompromising superego.

Her earliest memories fit well the austere, highly principled and stoically long-suffering way of life which characterized this woman at the time she presented herself for treatment. Her very earliest memory tells of being unjustly coerced, threatened and then punished by father, who wanted her to confess to something she hadn't done; she stoically and with stubborn adherence to principle accepted all of the punishment rather than tamper with the truth. Another memory describes her being forced to eat when she didn't want to. Still another told of her being disappointed one time at her father's failure to get for her one of the noisemakers that other children in the neighborhood had for Halloween: She added, "I was disappointed, but of course I couldn't show it."

Such themes of willful stubbornness or defiance, as if to make the tacit assertion, "This is me; I challenge you to budge me; I myself now define the limits of my autonomy," are typical form-variants of the "anal" paradigm. Other anal memories, representing other anal relationship paradigms, revolve around themes of retentiveness; themes in which one besmirches (or is himself besmirched) with words or other forms of vilification; themes of harmony and of order.

These self-and object-representations stand in striking contrast to phallic-intrusive, phallic-exhibitionistic and phallic-locomotor themes which some people choose as the most convincing vehicles for their retrospective self-definition. They call to mind activities in which the body, especially the striped muscles, is used assertively for conquest, mastery or the display of physical or sexual authority. Such themes generally allude to the pleasures of, or the fear of, making a self-assertive demands. Early memories may be analyzed as if they were fantasied representations of self and others, rather than as factual accounts of a few scattered events in a person's life. Clinicians stand to learn much about an informant's character structure and psychopathology if they

intrusive impact on one's surroundings. In such themes one ventures forth or takes a chance, even if this means meeting the world head-on. Not infrequently such themes appear in inverted form and depict the fearful consequences of venturing too far, or challenging too recklessly.

Illustrative of this phallic level of self-definition are a set of memories told by a man whose work, relations with other men, and attitude toward his wife was that of a very masculinely competent person. He came for treatment, however, because of sexual impotence. As is so common in people like this, his early memories consist largely of allusions to phallic prowess and mastery, phallic-locomotor competence, phallic-intrusive impulses, and phallic-aggressive threats. This man's memories alluded in one way or another to his wish to be as powerful as his father, his fear of the father's violent masculinity, his fear of phallic women, and his reminder to himself that aggressive, masculine assertiveness could lead to fearful consequences, like damage to his body or even attacks which could kill. These themes were wholly consistent with the man's life style and consistent also with his form of psychopathology.

The time has come to sum up. I have tried to call attention to a development in the proliferating science of projective methods which takes as its point of departure the discovery that the manifest content of a person's early memories convey more than the term "screen memory" would imply. Like the manifest content of dreams and other conscious thought processes, early memories provide a potentially rich source of data from which to infer defensive and adaptive choices made by the ego as it seeks to come to terms with powerful internal and external demands. Early memories may be analyzed as if they were fantasied representations of self and others, rather than as factual accounts of a few scattered events in a person's life. Clinicians stand to learn much about an informant's character

structure and psychopathology if they treat his early memories not as historical truths (or half-truths) but as thematic representations of prototypical dilemmas, life strategies, and role paradigms around which he defines his relationship to himself and to his personal world.

REFERENCES

- Ansbacher, H. L. Adler's place today in the psychology of memory. *Individual Psychology Bulletin*, 1947, 6, 32-40.
- Babcock, C. G. The manifest content of the dream. *Journal of the American Psychoanalytic Association*, 1966, 14, 154-171.
- Beck, A. T. & Ward, C. H. Dreams of depressed patients. *Archives of General Psychiatry*, 1961, 5, 462-467.
- Claparede, E. Recognition and me-ness. Chapter 3 in D. Rapaport, *Organization and pathology of thought*, New York: Columbia U. Press, 1951.
- Eisenstein, V. W. & Ryerson, R. Psychodynamic significance of the first conscious memory. *Bulletin of the Menninger Clinic*, 1951, 15, 213-220.
- Erikson, E. H. The dream specimen of psychoanalysis. *Journal of the American Psychoanalytic Association*, 1954, 2, 5-56.
- Federn, P. *Ego Psychology and the Psychoses*. New York: Basic Books, 1952.
- Freud, S. Screen memories (1899). Standard Edition, 3, 303-322. London: Hogarth Press.
- Freud, S. Childhood memories and screen memories. (1901) *Psychopathology of Everyday Life*, Chapter 4. Standard Edition, 6, 43-52. London: Hogarth Press.
- Freud, S. Leonardo da Vinci and a memory of his childhood. (1910) Standard Edition, 11, 59-137. London: Hogarth Press, 1953.
- Freud, S. Remembering, repeating and working through. (1914). Standard Edition, 145-156. London: Hogarth Press.
- Freud, S. Constructions in analysis. *International Journal of Psychoanalysis*, 1938, 377-387.
- Greenson, R. On screen defenses, screen hunger and screen identity. *Journal of the American Psychoanalytic Association*, 1958, 6, 242-262.
- Kris, E. The recovery of childhood memories in psychoanalysis. *Psychoanalytic Study of the Child*, 1956a, 11, 54-88.
- Kris, E. The personal myth. *Journal of the American Psychoanalytic Association*, 1956b, 4, 653-681.
- Langs, R. Earliest memories and personality. *Archives of General Psychiatry*, 1965, 12, 379.
- Lewin, B. D. Sleep, the mouth, and the dream screen. *Psychoanalytic Quarterly*, 1946, 15, 419-434.
- Lewin, B. D. *The Psychoanalysis of elation*. New York: W. W. Norton, 1950, (p. 72).
- Martin, P. A. One type of earliest memory. *Psychoanalytic Quarterly*, 1959, 28, 73-77.
- Mayman, M. Early memories and abandoned ego states. Southwestern Psychology Association, April, 1959. *Proceeding of the Academic Assembly on Clinical Psychology*, Montreal, McGill U. Press, 1963, pp. 97-117.
- Mayman, M. & Faris, M. Early memories as expressions of relationship paradigms. *American Journal of Orthopsychiatry*, 1960, 507-520.
- Noble, D. A study of dreams in schizophrenia and allied states. *American Journal of Psychiatry*, 1951, 107, 612-616.
- Plank, E. Memories of early childhood in autobiography. *Psychoanalytic Study of the Child*, 1953, 8, 381-393.
- Richardson, G. A. & Moore, R. A. On the manifest dream in schizophrenia. *Journal of the American Psychoanalytic Association*, 1963, 11, 281-302.
- Roth, N. Manifest dream content and acting out. *Psychoanalytic Quarterly*, 1958, 27, 547-554.
- Saul, L. J. The utilization of early current dreams in formulating psychoanalytic cases. *Psychoanalytic Quarterly*, 1940, 9, 453-469.
- Saul, L. J., Snyder, T. R., & Sheppard, E. On earliest memories. *Psychoanalytic Quarterly*, 1956, 25, 228-237.
- Sheppard, E. Systematic dream studies: Clinical judgments and objective measurements of ego strength. *Comprehensive Psychiatry*, 1963, 4, 263-270.
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A Clinical Psychologist-Assistant Approach to Psychodiagnostic Testing¹

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Summary: An approach to psychodiagnostic testing in which bachelor-level personnel are employed in most aspects of individual testing and scoring in collaboration with a fully-trained clinical psychologist was described. The approach is designed to use more effectively the time of the clinical psychologist in interviewing, selected testing and interpretation of findings. Evaluations of three visiting senior consultants were presented which focus on the issues of assistant performance, training, the clinical psychologist-assistant relationship, and selection and retention. The value and usefulness of the approach was discussed with suggestions regarding related administrative and professional problems.

Assessment historically has been a major function of the clinical psychologist and although many changes have occurred in the role of clinicians, diagnostic testing is still a significant activity. Approximately half of the respondents in a survey of 1024 members of Division 12 of APA indicated that they spent some time in diagnostic testing and one out of six spent more time on testing than anything else (Kelly, 1961). Manpower data indicate that the demand for psychological services, including testing, will increase at a greater rate than fully-trained clinical psychologists will be produced (Albee, 1959). Except in certain military clinical psychology settings, where consistent use of clinical psychology technicians has been made, there has been little experimentation with alternatives to the typical approach to clinical psychological testing that has developed since World War II.

The traditional model in diagnostic testing has required that the Ph.D. level clinical psychologists perform personally the *total* process of data-gathering, observation, interpretation, writing, and final consultation regarding the referral request. The strong influence of the psychoana-

lytic framework, particularly on the development of projective testing, has emphasized the importance of first-hand observation and involvement of the clinical psychologist, even in testing situations in which relatively objective instruments are used.

The observation that recently trained clinical psychologists have many resistances to testing, has been well documented (Holt, 1967). One consequence of this is that psychological testing tends to be passed down to the newer persons on the staff. When a facility has a training program it has been observed that referrals are handled by trainees with senior psychologists engaged only in supervision. The unfortunate effect of these practices on the declining status of diagnostic testing has been noted (Carson, 1958).

A further point of interest relates to economic considerations. Several years ago it was estimated that a reasonable cost for a comprehensive psychological battery was well over one hundred dollars (Gurvitz, 1958). In actual practice, Gurvitz observes, there are two ways clinicians keep private fees lower than this: either by giving highly abbreviated batteries with short reports; or, in some cases, taking an unrealistic economic view toward their production by spending many hours in lengthy testing, interpretation, and writing.

Recently, attention has been called to developing adequate technical assistance for the clinical psychologist through use of laboratory approaches using technicians (L'Abate, 1964). An optimistic report of the use of volunteers in testing has been

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presented (McCann, 1964). While many facilities employ secretarial and other assistance in administering and scoring group tests, there has been little systematic development of psychology assistants to facilitate psychological testing and few guidelines for the development of such programs in civilian inpatient and outpatient settings. In contrast, the Army and Air Force have heavily employed clinical psychology technicians and developed guidelines for their use (Departments of the Army & the Air Force, 1951).

In view of these considerations we decided to train and use assistants in the diagnostic process, with the following goals:

a. To train persons at the baccalaureate level to administer and score a wide range of conventional psychological instruments.

b. To structure the duties of the clinical psychologist and of the assistant in such a way that the assistant has appropriate supervision and the clinical psychologist maintains patient contact.

c. To maximize the evaluative and report writing activities of the psychologist, placing as much of the data gathering tasks as possible in the hands of the assistant.

Development of Psychology Assistant Program

Two persons, a man and a woman, were hired on a year's basis to be trained as psychological assistants. Both had baccalaureate degrees: one a major in psychology, the other with several undergraduate courses in psychology. The latter person had previously been employed in our facility as a supervisor in the secretarial pool. Neither had studied test administration or mental measurements. Both were near or in the superior range of intelligence (WAIS IQ equivalent of approximately 120). The assistants showed adequate work attitudes as measured by such factors as attendance, punctuality, performance of assigned duties, handling administrative responsibilities and serving as administrative aides in the Psychology Division, which consists of eight Ph.D. clinical psychologists as well as several research psychologists. Their duties primarily focused on diagnostic testing, but

they also assisted in a project evaluating psychological reports.

Training focused on orientation to the setting, dealing with psychiatric patients, individual instruction in various test procedures, practice testing with staff and with each other, testing under observation, and review of testing sequences performed by the assistants on videotape. The assistants were first introduced to various group tests and received experience in administering and scoring these. They soon assumed full responsibility for the group testing program of adults, with a staff psychologist selecting patients appropriate for initial group testing procedures. Emphasis was then placed on the general rationale and purpose of individual tests, techniques of administration and scoring, and the various ways of handling special testing problems typically presented by psychiatric patients. Videotape sequences were made of the assistants and viewed in a regularly scheduled teaching conference with staff psychologists. At the end of one year's experience they were judged by staff here as able to administer the following instruments: WAIS, WISC, TAT, MMPI, California Personality Inventory, Benton Visual Retention Test, Bender-Gestalt Test, Hooper Visual Organization Test, Purdue Pegboard, Peabody Picture Vocabulary Test, Holtzman Inkblot Test, Strong Vocational Interest Inventory, AGCT, Draw-A-Person, Sentence Completion Test, Stanford-Binet and the Wide Range Achievement Test. They score the WAIS, WISC, Benton, Peabody Picture Vocabulary Test, and the various group tests outlined above. Their scoring is checked routinely by the clinical psychologist responsible for the case.

Throughout the project we have been concerned with the most appropriate ways to use the assistants. As indicated, our plan was to give the responsibility for each clinical assessment to a staff clinical psychologist, who would select the instruments which the assistant would administer, and retain responsibility for the case. In general this has worked out adequately and the staff psychologists have increasingly employed the services of the assistants. Typically, the clinical psychologist initiates contact with a patient, interviews

or administers some tests, if he prefers, and then selects the instruments that the assistant will administer. In the case of outpatients, the psychologist and assistant plan for appointments and procedures before the patient arrives. In some instances, most notably on the Children's Outpatient Service, the assistant has seen the patient before the psychologist, the tests to be given having been specified by the psychologist on the basis of referral information. The staff psychologist reviews the results of tests given by the assistant and administers any more specialized instruments indicated in his subsequent contacts with the patient.

The assistants have had experience in all services of the Nebraska Psychiatric Institute, including the Adult Inpatient Service, Adult Outpatient Service, Children's Inpatient Service, and Children's Outpatient Service. During the first year of this project about 75% of the assistants' time was spent on the Adult Inpatient and Adult Outpatient Service. A review of testing productivity on the Adult Services was done comparing the four-month period of January 1965 to April 1965 (no assistants available) with January 1966 to April 1966, (two assistants available). The number of clinical psychologists (three on the average) available for diagnostic services on the Adult Services during these two periods was comparable. During the 1965 period 69 patients were evaluated; 145 patients were seen in 1966 during the four-month period when the two assistants were available. During the *last six months* of their first year's experience the two assistants tested 351 patients, administering 765 tests. (Of these cases 75 were group screening evaluations.) Altogether 28 *different* tests were administered in this six-month period by the assistants.

Consultants' Evaluation of Psychology Assistant Program

Three senior clinical psychologists from other settings each spent two days on *different* occasions observing the assistants at approximately the eighth month of their training. They observed each assistant in two separate testing situations, one "live" and the other videotaped. In addition,

they interviewed the participating staff psychologists and the two assistants. Excerpts from their narrative comments are presented.³

Assistant Performance

As of the date of my consultant visit the two assistants in training had reached a technical level of competence one might expect of a psychology graduate student at the beginning of his internship. The technical aspects of test administration are reasonably well handled, although there remain occasional errors which ought to be corrected. At the same time the trainees do not yet seem to feel comfortable enough about the mastery of their technical skills to rise above the preoccupation with the mechanics of test administration in order to respond to the patient in a spontaneous and relaxed fashion. The major lack in the performance of the trainees is in the ability to observe and describe patient behavior and to be aware of the more subtle reactions that come to be expressed in gestures and voice inflections. More training designed to sharpen observational skills and facility in reporting these observations would seem indicated. (A)

As psychometrists the assistants reached a fully satisfactory level of achievement. Although tests were administered somewhat mechanically, answers were carefully recorded and there is little doubt but that there would be a consistently high correlation between the formal results of the assistant and those of any other experienced test administrator.

The assistants are more skillful in test administration *per se* than the preinternship graduate student and they are clearly more meticulous in following standard rules of administration and scoring than most senior clinical psychologists. However, because their activities have been circumscribed by design, comparison with individuals in a professional role is not fully appropriate.

It is difficult to place the performance of the assistants on a scale which compares them with clinical psychologists at any level of training. Essentially, this is because they are programmed differently. Even the neophyte psychologist in training who may be far more awkward in handling test materials is, nevertheless, somewhat more likely to be patient centered and to be open to communications beyond those relating strictly to the test stimulus. (B)

From observations of the assistant's testing activities and interviews with staff psychologists, there would seem to be no doubt that they can

³ The consultants are identified by the code letters A, B, and C.

play an extremely useful role in a clinical setting. Testing, while a bit erratic in places, was quite satisfactory in general, approximating the level of an intern during first six months or so. I would expect by the end of a 12-month period of on-the-job training one could allow assistants almost complete freedom in data collection.

As a summary reaction, the visitor came away with the conviction that the program has already demonstrated that: in eight months reasonably bright and mature young people can be trained to collect psychometric data in an acceptable fashion, to carry out previously designed research activities, and to handle a variety of professional administrative tasks. From the reactions of staff psychologists interviewed there is no question that psychological assistants are highly useful and—on a cost accounting basis—more than pay for themselves. (C)

Training

It would seem highly desirable to give somewhat greater structure to this training program by setting a clearly spelled out training goal and a specific end point. In setting a training goal it may be necessary to conceptualize an ideal standard of performance, for at the present time it is not clear whether we are aiming for the equivalent of technical competence at the end of an internship or for the technical competence one might ordinarily expect from a clinical psychologist with several years of experience. In my own judgment the latter standard would seem preferable, for if one delegates a portion of the clinical psychologist's function to an assistant one might wish that the assistant's level of competence be equivalent to that of the clinician for whom he works. Whether this is an unattainable ideal remains to be seen. (A)

Both assistants expressed the belief that the first week or two should be more structured than was their experience. They proposed that in addition to training on the administration and scoring of tests, they be given supervised orientation tours of the institution, be introduced to relevant members of the staff, be given more insight into how the institution serves patients and be given specific insight into how they would fit into the existing programs and services in the institution. (B)

Criticisms of the training aspect might be the lack of testing experience with 'normal' individuals and limited observation of assistant's testing behavior. The first is, in my opinion, important as a reference base for nontest behavior. Given only psychopathological subjects, certain behaviors may be accepted as 'normal' and ignored whereas they might very well convey meaningful information to the case psychologist if reported to him. Secondly, the first

year of testing experience is probably most crucial and periodic check-ups desirable. Even the prospect of being observed on, say, the WAIS after having given 20 or 30 should elicit a more careful attention to administrative and scoring conventions. If one of the goals is to have strictly comparable test data across patients, then repeated checks during the first year are essential. (C)

Clinical Psychologist-Assistant Relationship

A number of staff members preferred the assignment of a specific assistant to a specific staff member and I would endorse this as a desirable arrangement. Inasmuch as the assistant is essentially an extension of the clinician the possibility of having the assistant become used to the idiosyncrasies and specific orientation of an individual psychologist and vice versa seems desirable. Clearly if such an arrangement is made the psychologist would have to be held responsible for continued supervision and recurrent spot checking of the assistant's work.

Explicit steps should be taken to require that the psychologist responsible for the evaluation of a patient spend some time in direct clinical contact with the patient before preparing his report. Whether this contact involves an interview or additional testing such as projective techniques, will depend on the nature of the case and on the referral question to be answered, but in view of the fact that the professional responsibility for the patient's evaluation continues to rest with the clinical psychologist, a cursory glance at the patient while he is in the waiting room 'to see what he looks like' cannot be considered adequate. As the psychological assistant becomes more competent there may be a danger of turning more and more of the evaluation over to him, and clear-cut administrative steps should be taken to preclude this development. (A)

With children, perhaps, more than with adults, staff members felt somewhat detached from patients tested by assistants in contrast with those with whom 'one goes all the way through their struggles with the tests.' Since staff members typically give one or more tests themselves in addition to interviewing the patient, most agree the opportunity for 'clinical feel' for the patient is only attenuated and not lost. (B)

All staff interviewed had a very positive reaction to the assistant program, including two who admitted to rather strong initial reservations. Apparently, their usefulness is maximal on the inpatient adult service but both outpatient and child service staff consider them of considerable value. (C)

Selection and Retention

In order to give the psychological assistant an identity related to psychology, it might be desirable to select individuals with an undergraduate major in psychology. Such people might see the job of psychological assistant either as a permanent occupation or as an intermediate step before continuing with advanced studies in psychology. (A)

Considering the demands that staff members make on assistants, it seems unlikely that long tenure should be achieved by recruiting young people of modest intelligence and limited aspiration. Rather, the preferred solution may be that of recruiting and training bright and energetic women who are committed to careers as wives and mothers but seek additional stimulation in a less than full-time position outside their homes.

An alternative is to reconcile oneself to service of one or two years duration by recent college graduates who require employment for a time before going on to graduate school. The apparent rapidity with which bright, interested people can be brought to a useable level of training makes this alternative feasible, if less desirable. (B)

It appears to be somewhat of a dead-end for an upward striving person, with his only hope of advancement being to go to graduate school and become a clinical psychologist. The position may, of course, be considered a time-limited one but one would have to count on two or three years service to adequately repay for training time. (C)

Discussion

There was a slight difference in the estimates of testing competence of the assistants by the consultants ranging from a beginning internship level to persons with six months internship experience. All consultants felt they showed deficiencies in interpersonal sensitivity and skill whereas their general attention to detail and care in scoring was an asset. After the consultants' evaluation greater attention was focused on training the assistants in developing more effective relationships with patients using videotape replays. There was a tendency for our assistants to focus primarily on the mechanics of testing. There are a great number of technical skills to master and they apparently can more clearly identify and see errors in test administration than in their interpersonal relationships. With more focus on the area

of behavioral observation and interpersonal skill we found that the assistants were motivated to improve. While increasing interpersonal skills should be a specific training goal, an attempt should be made to select persons beforehand who demonstrate considerable interpersonal sensitivity.

The recommendation that there be a clearer distinction between training and work experience is well taken. We tended to conceive of the year as a continuous training-work experience with the goal of working effectively in our own setting. If formal programs for psychological assistants are developed, either as part of baccalaureate programs or as special training programs after the completion of college, attention will need to be given to developing curricula and training experiences that will provide a base on which eventual functioning in a wide variety of institutions, clinics, and facilities can be built.

Assignment of assistants to designated psychologists as opposed to a "pool" method of assignment is an important issue. Assistants have their unique ways of relating and detailed knowledge of this is quite helpful in evaluating their reported observations. One problem that occurs is the introduction of innovations in procedure to the assistants by individual psychologists. The assistants should be able to differentiate standard instructions from preferences of individual psychologists.

While we are not experienced enough to give any particular suggestions regarding retention, we had no difficulties in getting applicants and have had inquiries from several persons through the last year. Actually, an assistant can provide useful services almost from the first day of employment in group testing and carrying out other administrative tasks. Staff time assigned to training is the major extra cost.

The objections usually raised regarding the use of assistants include the loss of direct patient contact and the possibility of technicians overstepping the bounds of their training. "The manner in which a patient arrives at a response" is particularly crucial with children, one consultant observed, suggesting a loss of crucial information in some cases. We feel there is

considerable flexibility in the clinical psychologist-assistant model which allows the psychologist as much direct patient contact as he feels is required. However, careful administrative supervision is needed to avoid improper assignments of the assistants by staff members. Also, problems could certainly arise if a setting using assistants lost its staff of trained psychologists. However, as requirements for the practice of psychology are defined through statutory methods, it is felt psychologists will feel greater security in developing and accepting technical assistance.

REFERENCES

- Albee, G. W. *Mental health manpower trends*. New York: Basic Books, 1959.
- Carson, R. C. The status of diagnostic testing. *American Psychologist*, 1958, 13, 79.
- Departments of the Army and the Air Force. *Military clinical psychology*. Washington: U.S. Government Printing Office, 1951.
- Gurvitz, M. S. The psychodiagnostic test battery: Economic factors. In D. Brower & L. E. Abt (Eds.) *Progress in clinical psychology*. Vol. III. New York: Grune & Stratton, 1958, pp. 86-92.
- Holt, R. R. Diagnostic testing: Present status and future prospects. *Journal of Nervous & Mental Disorders*, 1967, 144, 444-465.
- Kelly, E. L. Clinical psychology 1960: Report of survey findings. *Newsletter, Division of Clinical Psychology*, 1961, 14, 1-11.
- L'Abate, L. *Principles of clinical psychology*. New York: Grune & Stratton, 1964.
- McCann, W. H. Volunteers learn test techniques. *Mental Hospitals*, 1964, 15, 269-271.
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The Influence of Pre-testing Information on Rorschach Based Personality Reports¹

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Summary: Clinical and counseling psychology graduate student *Es* were required to prepare personality reports, using a Q sort, prior to testing *Ss* and again after administering the Rorschach. The pre-test reports were based on personality descriptions intended to induce expectancies concerning *Ss'* EBs. Although *Es* interpreted the descriptions correctly, their expectancies failed to influence *Ss'* Rorschach performance. However, although their pre-testing predictions were in error, *Es* did not significantly revise their final personality report which was based on the Rorschach examination. It appeared that the Rorschach test data tended to be ignored even when there was evidence of the invalidity of the pre-testing personality descriptions. The implication of this finding for the supervision of trainees was noted.

Anamnestic material and the observations of other clinicians are often available to psychological examiners (*Es*) who themselves have the opportunity to obtain data from subjects (*Ss*). The degree to which these former data should and do influence the inferences derived from psychological test data by *Es* is both an important and complex issue. On the one hand, the test data may be best understood in the context of anamnestic material. But on the other hand, there is a clear danger: the insights to be derived from test protocols may be abandoned because of a too zealous reliance on the "facts" obtained by other observers.

The data to be presented here provide an opportunity to examine the degree to which neophyte clinicians rely on personality information made available to them prior to obtaining Rorschach protocols when preparing a post-testing personality report. What is interesting here is that this

prior information is invalid and *Es* had the opportunity to learn this.

In a recent study (Strauss, 1968), personality descriptions were utilized to induce expectancies in *Es* about the Rorschach experience balance (EB) of *Ss* they were to test. Although, on the whole, *Es* developed the appropriate expectancies, no evidence of expectancy effects on the actual EBs were found. The correlation between the anticipated (predicted) EB and the obtained EB was an insignificant .16 ($df = 28$).

Es' participation in that experiment had been obtained by inviting their cooperation in a study of the influence of information made available prior to a Rorschach examination on the personality report written after testing. Did *Es* rely on this information even after their expectancies had not been confirmed? Was the degree to which this information was used related to the degree to which their expectations were confirmed?

Method

A detailed description of procedures is available elsewhere (Strauss, 1968); only those aspects directly relevant will be discussed here. Five female clinical or counseling psychology graduate students each tested six female undergraduate *Ss*. *Es* had all completed a full course in projective techniques, including practicum experience, and were about to begin their clinical internships.

For four *Ss*, *Es* were given personality descriptions presumably based on other test and behavioral observations; for the other two, only name and age were pro-

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vided. Actually, the personality descriptions were derived from descriptions of Rorschach introversives and extratensives in standard texts (Beck, 1945; Klopfer, Ainsworth, Klopfer, & Holt, 1954; Schaffer, 1954). Two descriptions of introversives and two of extratensives, of approximately equal length, were randomly assigned to Ss. Ss, in turn, were randomly assigned to Es.

Es were required to "write" personality reports before contacting Ss using whatever information was at hand. A report was again "written" after administering and scoring the Rorschach. The reports were written with Block's (1961) 100-item, forced distribution Q sort, Form III.

Results

The Q sort deals with a broad domain of personality attributes, while the personality descriptions deal with only a narrow range—characteristics related to EB. Little consistency between the pre-test Q sort (Q1) and the post-test Q sort (Q2) would be expected on a priori grounds, since the inferences required in completing Q1 would have to be based in

large part on guess work. After the Rorschach examination Es would have available to them not only the protocol, but their own observations upon which to base Q2.

The mean Q1-Q2 correlations (See Table 1), however, show this to not be the case. The degree of consistency between the pre- and post-Rorschach sorts is moderate for the two groups for which pre-test information was available. While no estimate of the significance of the correlations is possible (Block, 1961, p. 103), we may treat the correlations as data and determine whether stable differences in the degree of consistency between the Q1 and Q2 sorts appear as a function of the kind of pre-test information available or as a function of the examiner-rater.

The analysis of variance of these correlations (See Table 2) reveals significant effects for both pre-Rorschach information available ($F = 5.3919$, $df = 2, 15$, $p < .05$) and for examiners ($F = 7.3788$, $df = 4, 15$, $p < .01$). The interaction term fails to achieve the conventional level of significance ($F = 2.6281$, $df = 8, 15$, $p < .10$). Newman-Keuls individual com-

Table 1
Mean Q1-Q2 Correlations

Examiner	Pre-Rorschach Personality Description			
	Introversive	None	Extratensive	M
1	.385	.115	.825	.442
2	.545	.085	.175	.212
3	.360	.005	.265	.210
4	.720	.465	.555	.580
5	.075	.165	.180	.020
M	.417	.133	.328	

Table 2
Analysis of Variance of Q1-Q2 Correlations

Source	SS	df	MS	F	p
Group	4220.07	2	2100.04	5.3919	.05
Examiner	11550.20	4	2887.55	7.3788	.01
GXE	8227.60	8	1028.45	2.6281	.10
Within	5870.00	15	391.33		

parisons (Winer, 1962, p. 238) indicate that the $Q1-Q2$ correlations are no different for the Introversive and Extratensive groups, although both differ significantly ($p < .05$) from the magnitude of $Q1-Q2$ correlations in evidence in the group for which no pre-Rorschach personality information was provided.

The examiner differences are essentially due to $E4$, who differs in the degree of consistency of Q sorts from $E2$, $E3$ and $E5$ ($p < .05$), and $E1$, who differs only from $E5$ ($p < .05$). Since no personality or socio-psychological data are available for these E s, no speculations concerning the determinants of these differences can be offered.

It was noted earlier that there was no significant relationship between the EBs anticipated on the basis of the pre-test personality descriptions and the EBs obtained from S s. Thus, there would appear to be no rational basis for the greater stability of the $Q1-Q2$ correlations in the Introversive and Extratensive groups in contrast with the no pre-test information group. It is possible that although no significant anticipated EB-obtained EB correlation exists, the degree of congruence between E 's predicted EB and the EB obtained is associated with the magnitude of the $Q1-Q2$ correlation. Less revision in $Q2$ would be necessary when expected and obtained EBs were minimally discrepant than when they were markedly different. This explanation of the stability of Q sorts rests on the presence of a negative correlation between expected and obtained EB discrepancies and $Q1-Q2$ correlations. This correlation in fact is small and nonsignificant ($r = -.09$, $df = 28$, NS). Thus, the stability of the $Q1-Q2$ correlations appear to be a product of bias rather than consistency in S behavior.

DISCUSSION

These data suggest that information made available prior to testing may well

bias E s so that they ignore test data they obtain as well as their own observations of S behavior. This is the case here even though the predictions E s made on the basis of this pre-test information were not confirmed by the test protocols and, therefore, no "rational" basis for paying greater attention to behavior they did not observe existed.

One suggestion which may be advanced on the basis of these data is "let the supervisor beware" lest the trainee fail to explore the test data he obtains when anamnestic or other pre-test information is available. It should be noted, in conclusion, that no implications concerning the validity of inferences based on projective protocols alone are being made. It is clear, however, that the validity of these interpretations cannot even be tested if the data are ignored when a personality evaluation is prepared by an examiner.

REFERENCES

- Beck, S. J. *Rorschach's test: A variety of personality pictures*. New York: Grune & Stratton, 1945.
- Block, J. *The Q-sort method in personality assessment and psychiatric research*. Springfield, Ill.: C. Thomas, 1961.
- Klopfer, B., Ainsworth, M. D., Klopfer, W. G., & Holt, R. R. *Developments in the Rorschach technique. Vol. I. Technique and theory*. Yonkers, N. Y.: World, 1954.
- Schafer, R. *Psychoanalytic interpretation in Rorschach testing*. New York: Grune & Stratton, 1954.
- Strauss, M. E. Examiner expectancy: Effects on Rorschach experience balance. *Journal of Consulting Psychology*, 1968, in press.
- Winer, B. J. *Statistical principles in experimental design*. New York: McGraw-Hill, 1962.

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Symposium: Consensus Rorschachs in the Study of Problem Behavior

Introduction

NORMAN L. FARBEROW, *Chairman*

As psychology's focus has expanded in the past two decades from the individual to the group and community, new problems have appeared. The problems have been both technical and conceptual, involving ways of looking at interpersonal behavior in both small and large systems, and the development of procedures for observing and measuring such behavior. Early interest was centered on the individual and his dynamics, and the development of psychology was reflected in the exploration of intrapsychic activity using instruments designed to measure facets of the single, unique person, his motivations, impulses, needs, desires, and controls. Today, with attention turned to systems, there has been no de-emphasis of the individual; rather, there has been an increase in the recognition accorded to the group within which he functions. As subject matter, the psychologist is now concerned with not just a conglomeration of behaviors by each individual who may or may not be in a relationship with others, but with the representation of influences, roles, expectations, stimulations, demands, wishes, transactions and interactions which are the essence of group functioning. The contention is that understanding and prediction of all behavior is increased by the addition of these data.

A relatively small convenient group for study has been the family. As a basic societal unit, it has already been studied intensively for its role in the fashioning of the individual. The family is now being examined in exquisite detail as a self-contained system, and as a sub-system in a large complex of many systems. This examination of the data is both arduous and tedious. It takes dedication and conviction to spend hours listening to playbacks and replays of tape recordings, filmings, and other observational data.

In general, the instruments used for the elicitation of the data have been familiar measures used innovatively, such

as the WAIS, TAT, DAP, S-C, MMPI, Proverbs. Some measures are not so familiar, such as the Object-Sorting Test, therapy excerpts, color-matching tasks, or the opinionnaire items of the Revealed-Differences procedure. The participants in today's symposium have all used some of these measures, but in addition, have all used the Rorschach, not only in new exploratory ways but also with varying conceptual approaches. The common feature was the consensus Rorschach, that is, a protocol produced under the requirement that the family group shall have agreed on all the responses offered. All of us are aware of the difficulty in having two or more people agree on objective, structural facts. The process involved in several persons trying to agree on unstructured, individually determined, projective material, provides a fascinating new window into heretofore little-explored aspects of human behavior. Sometimes the consensus Rorschach was preceded by individual Rorschachs to each member of the group, allowing study not only of differences between individual and group content but of the subtle effects of the interaction on each person. We will hear today of new terms and suggestive concepts, such as transactions, attention and meaning patterns, potential, efficiency, emergent and other responses, role and role expectations, and others. Our speakers come from continuing work in this area. Each speaker will have about 20 minutes and our two discussants will each have ten. Hopefully, this will allow 15 to 20 minutes for audience discussion following.

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The Consensus Rorschach: Background and Development

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We do not require the experiments of social psychology to demonstrate that people behave differently in a crowd than they do as individuals. Revival meetings, mass demonstrations, riots, strikes, rebellions, and football games, all offer instances in which people have behaved in a way which often seems outlandish, extreme, or radical, or even bizarre. A crowd, or sometimes even a small group, seems to exert an influence on certain individuals which the ordinary two person encounter is incapable of doing.

When the Southern Reception Center and Clinic of the California Youth Authority was opened in 1954, the difference between the individual and group behavior of juvenile offenders was particularly apparent to those of us of the psychological staff. The three psychologists, William Crane, Stephen Jacobs, and myself frequently discussed this problem in staff conferences. We were, in fact, so struck by the discrepancy between the behavior of the youngster in a private office, sitting across the desk from the examiner and the behavior of that same youth in the courtyard with others of his age, that each of us spent a period working on the unit (the living quarters) as a Boy's Group Supervisor. We wanted to observe, in the spontaneous give and take of the group situation, some of the behavior that seems to be missing in the polite interchanges we experienced with these youngsters in our offices. The experience was enlightening, in that it demonstrated the striking difference in behavior from the individual to the group situation; however, we did not always have the time to spend long hours on the unit and when we returned to the quiet of our offices, we were faced with the same opacity, the blank stares, the embarrassed silence and the defensive, evasive, manner which characterized the newly admitted juvenile offender.

In the testing situation, these youngsters proved particularly refractory. Char-

acteristic responses to the Rorschach were as follows:

It's just a leaf, man, It's a leaf because it looks like one. Because it has the shape of a leaf. (What shape is that?)

It's the shape that a leaf has, man, that's all. It looks like a leaf looks like.

It's an ink blot. (What makes it look like an ink blot?) It's an ink blot because it doesn't have any shape. That's the way an ink blot is. (Could it look like anything else?) No, just ink. (Sometimes when ink is spilled, it will form a shape that looks like something familiar. Can you see any shapes here?) No, I don't see nothin. It goes all around like ink does when it spills but it doesn't look like nothin.

There were a number of factors that seemed to influence this defensiveness on the part of a youth. In discussing them, the staff listed a few of the possible factors as follows:

1. The youth's identification with the delinquent underground and his feeling that the examiner represented the "establishment," the role of the outlaw keeping his secrets from the prying eyes of the law.

2. In some cases, the delinquent was arrested for a sexual offense and there was a feeling that he was afraid the Rorschach examination would reveal something about his secret sexual desires or impulses.

3. The general attitude of youth toward adults. "Don't trust anyone over 30."

4. In cases where there was an ethnic difference, particularly a Negro youth and a white examiner, there was the additional feeling that "whitey" could not be trusted, that he would not understand in a sympathetic manner. It was a repetition of the familiar situation in which the white man places himself in a superior role and makes judgements about Negro behavior.

In many instances, of course, these attitudes were quite realistic. The psychologist working in an institutional set-

ting is always in an ambiguous position. At the Southern Reception Center, our goal was to help the youngster but also to protect society. On the one hand, we conducted individual and group psychotherapy sessions and psychological examinations. On the other hand, we testified before the Youth Authority Board regarding the disposition of a particular case. Our testimony was often used to determine whether or not the youth would be sent to a Youth Authority Institutional School, a camp, or whether he would be given probation.

As a part of the atmosphere of discovery and exploration which seemed to permeate the Southern Reception Center, in its early stages, there was a great deal of interprofessional association. Psychologists and social workers occasionally watched surgery and lectured to the nurses and medical staff. Doctors frequently described medical disease processes at great length in staff conferences. Social workers and psychologists worked rather directly with the police. On a number of occasions, I rode in a squad car with juvenile officers to prevent a gang fight or investigate a cutting incident. On one of these interprofessional exchanges, we psychologists were explaining the Rorschach to a group of social workers. We threw a few of the cards out on the table and explained their general purpose. Soon the social workers were examining the cards, speculating on the shapes and colors and arguing over what a particular shape might represent. We were so intrigued by their responses that we began to present the cards to them, formally, one at a time, asking them to discuss the cards and agree on a response. The spontaneity with which the social workers revealed themselves seemed to us quite striking even considering the air of camaraderie that prevailed between the psychology and social work departments at the time. We determined to try the same technique with groups of youngsters to see if we could establish a similar set of conditions.

After a few experiences of gathering small groups of youth together at random for group administration, I was convinced that the group situation increased the

spontaneity of response. In those cases in which I had examined the youngster individually prior to his being exposed to a consensus Rorschach situation, I found a decided increase, not only in the richness of his expression but in the form level as well. If the examiner were to attack a particular concept perceived by one of the youths, the youth's response would probably be to lower his eyes and conclude that he had made a mistake, withdrawing from further efforts. However, when another member of his peer group attacked his response, he usually defended it vigorously, pointing out details which supported his concept, arguing his point and making his case with considerable force and conviction.

I was also impressed by the fact that the particular structure of the group was very important. Mixed groups including Mexican, white and Negro youngsters often gave poor results. The boys did not feel at ease with each other. Often they were from rival gangs and did not want to reveal themselves in the presence of potential enemies. The same problem often came up in selecting boys at random from the unit. One could never know, in advance, what the relationship was between the various members of the group. It was necessary to talk to the supervisors on the unit to make sure one was getting a group together that would be compatible and at ease in each other's company.

One week, on examining a series of recent admissions to the Center, I discovered that two groups of boys had been admitted (one white group and one Negro group) both of which had been involved in gang rape. Here was an opportunity to experiment with a "natural" group, one which had grown from the motivation of its members and had directed itself toward a single objective. I decided to test each boy individually from both groups and then give a consensus Rorschach to both groups. I was familiar with the theory that homosexual factors constitute an important element in the gang rape experience and I wondered if this would be revealed by the tests. While some of the individual interviews with the white boys seemed to indicate considerable conflict in the area of masculinity and ag-

gressiveness, dominance and submission, the primary feature of the interviews was more a fear of weakness than any actual revelation of homosexual conflict in the youngsters. This may have been due to a differential motivation on the part of the white group versus the Negro group. On the other hand, the group of white youths was relatively much more defensive in the consensus Rorschach situation than the Negro group. Among the white youths, there were frequent glances at the examiner, particularly when venturing a new response, as if to see whether he would approve. The leader in the group quickly re-established his position of dominance, but his followers would only go so far. When he began to give sexual responses to the cards, the other members of the group refused to follow. On Card X, he saw a brassiere in the central blue areas between the two larger pink spots. When the other members of the group resisted, he made a few perfunctory attempts to convince them and then gave up. He did not come forth with a similar response again.

With the group of Negro boys my experience was quite different. In the individual Rorschach administration they were defensive, giving vague, noncommittal responses without supporting detail. The only exception to this was Kenny, a middle-class Negro boy with bright-normal intelligence who did not seem to belong in the group. He was much more responsive than the other youngsters and immediately established a good rapport with the examiner.

In the consensus Rorschach situation the Negro youngsters who were originally the most defensive, now became much more spontaneous than the white youths. They seemed to be "turned on" to each other and tended to ignore my presence altogether. When they gave a response, they looked to their peers for confirmation rather than to me. They talked and argued among themselves and seemed to establish very rapidly the same kind of free and easy exchange that one sees on the playground or in the living quarters. The result was that their responses to the consensus Rorschach were much richer and more revealing than for the group of white boys. In short, the Negro youths

passed from a position of extreme defensiveness to one of greater openness than any of the delinquent youngsters that I have tested.

It may be useful, at this point, to describe some of the boys in the Negro group before discussing their consensus Rorschach responses. Pete, the leader of the group, had shown the least imagination on the individual Rorschach. His responses were noncommittal, evasive, and very brief. However, when stimulated by the presence of the other boys, he showed a tendency to initiate the use of sexual material in two instances. In both cases, his responses were of a homosexual nature, in one case directly, and in the other case by implication. Joe was Pete's lieutenant. He had participated with Pete in a series of strong-armed robberies where the two boys beat up others on the street. These two boys were closer than other members of the group and Joe tended to support Pete in most of the latter's behavior. Bill was an aggressive youngster who is inclined to struggle with Pete for leadership, but who generally lost to him. In the gang rape experience, Pete had established his leadership by being the first one to have the girl. In order to do this, he had to push Bill out of the way since Bill was quite eager to be the first one. Kenny was the intellectual of the group. While the other boys scored average to below average on the intelligence tests, Kenny scored in the bright-normal range. He was much more verbal than the other boys in individual confrontation with the examiner, but there was a tendency for him to become submerged in the general excitement and discussion of the consensus Rorschach. Kenny constantly struggled with the group to improve the form level of the response and was more inclined to give human or animal responses. He was so active in this respect that, at one point, one of the other members of the group remarked, "Man, you sure got a real imagination." When Pete began to encourage the group to respond to sexual stimuli, Kenny actively opposed him and succeeded in gaining support of the group on both occasions. On Card III there was a decided struggle with Pete pushing hard for his sexual response and finally being

overcome by Kenny. On Card X Pete attempted to get the group to accept the concept of an anus in the lower green area. However, after one or two questions by Bill and some tentative support from Joe, the group again rejected his response. In general, it could be said that Kenny and Pete fought for leadership of the group and that Pete, in spite of his mediocre creative ability, was frequently able to bring the group into line with his own opinion. However, on the two occasions when he attempted to get them to accept homosexual stimuli, he was defeated by Kenny.

In many respects, the response of the group to the consensus Rorschach was a re-enactment of the gang rape experience, except that the outcome was different. In the rape, Pete had been the one to initiate the group in their joint sexual activity. He had been initially opposed by Kenny and Kenny further established his resistance to the group action by being the last one to have the girl. He was also the only boy who did not strike or push the girl.

On examining the results of this study and other consensus Rorschach adminis-

trations at the Southern Reception Center, I feel that the use of the Consensus Rorschach provided two distinct features in the examination of our subjects which was seldom obtained in individual administration. The richness and variety of responses were greatly increased for each individual as well as the form level of his responses. The group administration provided an opportunity to study the process of interaction among the youths in a dynamic setting. It seemed clear that the struggle for dominance and the lines of resistance in the group behavior on the Rorschach took place in a manner similar to group performance in the life situation. The presence of the examiner and the change in the environment had an effect on group behavior, but this was primarily directed toward the outcome rather than the group interaction itself. The results of this study have been reported in greater detail in an earlier paper (Blanchard, 1959).

REFERENCES

- Blanchard, W. H. The group process in gang rape. *Journal of Social Psychology*, 1959, 49, 259-266.

Interaction Product Analysis in Group and Family Diagnosis

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The use of traditional individual clinical diagnostic tests with small groups and families has been reported for a wide range of tests, and even figure drawings.

One major hope in adapting these clinical tests for group or family evaluation is that their technological and theoretical clinical wisdom can be transferred substantially from individuals to small groups. That standardized observations and alertness to both process and product in Ss' behavior samples are valuable are among the insights derived from traditional clinical testing experience.

Relatively more attention has been paid to group process than to group products in these budding efforts at psychological group evaluation. This "process preference" probably has several roots; it is scientifically more defensible (requiring fewer questionable assumptions), it is more consistent with the still-prevalent backlash to McDougall's "group mind" conception and it develops naturally from the traditional social psychological approach to small groups. (Clinical Psychology has no tradition in assessment of groups.) Cattell (1948) has offered an explicit statement relating group to individual psychology: "The behavior of a group has more formal resemblance to the behavior of an individual organism than to any other natural entity, principally in the following respects:

1. A group preserves characteristic behavior habits and structure despite the continual replacement of actual individuals.
2. It shows memory for group experience and learning.
3. It is capable of responding as a whole to stimuli directed to its parts, i.e., it tends to solve problems of individuals and subgroups by action.
4. It possesses drives which become more or less integrated in executive functions of nutrition, acquisition, aggression, defense, etc. Groups vary in dynamic integration analogously to the variations of individuals in character.

5. It experiences "moods" of expansiveness, depression, pugnacity, . . .

6. It shows collective deliberation, a process highly analogous to the trial and error thinking of the individual" In the field of diagnostic testing, the spirit of Cattell's position could be made concrete by such a proposition as the following:

7. The scores and profiles from consensus protocols on traditional clinical tests are characteristic of the group (that is, reliable) and predictive of the group's functioning (that is, valid) in ways that are analogous to the scores derived from the same tests when administered to individuals.

This, in fact, has been an exploratory proposition underlying the research program in Interaction Testing conducted at the Albert Einstein College of Medicine over the past few years. With an emphasis on interaction product (i.e., test scores), unexpected dividends, both empirical and conceptual have accrued. In studying marital I. Q. for example, (Bauman, Roman, Borello, & Meltzer, 1963), it was found that married couples can be tested in a standardized manner, taking about as much time as individual testing and that the resulting I.Q. scores are as reliable as individual I.Q.s. (These and other I.Q. reliability findings are summarized in Table 1.)

While these I.Q. findings are based upon sizable samples of couples, our Rorschach experience is more of a one-of-a-kind case-study variety, since this work is still at an exploratory level. Experiences like the following, however, suggest the fruitfulness of a similar product-oriented approach to Rorschach testing.

A therapy group of eight patients took the Harrower Multiple Choice Rorschach in Interaction before their first group session, and again nine months later (Roman & Bauman, 1960). Their instructions were to produce three responses per card as a group. Sixteen of the original 30 responses were duplicated in the nine month re-test. On these, the six responses

Table 1
Wechsler Bellevue Pro Rated I. Q.^a Scores of 50 Married Couples

Subjects	Form I			Form II		Pearson r: Form I vs. Form II ^b
	N	Mean	6	Mean	6	
Husband I.Q.	50	105.0	12.85	101.5	12.30	.85
Wife I.Q.	50	97.0	13.69	93.0	11.11	.82
Patient I.Q.	50	99.9	13.95	95.7	11.50	.88
Non-Patient I.Q.	50	102.1	13.70	98.7	13.21	.83
Interaction I.Q.	50	104.6	12.15	102.5	8.78	.85
Potential I.Q.	50	115.9	12.46	113.10	10.45	.84
Efficiency (Pot. Int.)	50	11.3	—	10.6	—	.50

Note: Reproduced from "Interaction Testing in the Measurement of Marital Intelligence", Gerald Bauman, Melvin Roman, Joseph Borello, Betty Meltzer, *Journal of Abnormal Psychology*, 1967, 71, 6, 489-495.

^aBased on Comprehension and Similarities subtests.

^bCorrected by Spearman-Brown Formula.

on cards IV and VII were identical from test to re-test, while cards VI and IX were rejected on re-test. (There were no rejections in the pre-test). Clinically, these findings suggest Interaction Rorschach stability as well as meaningful indications of change. Clinical inferences drawn from the "blind" comparison of the two records were confirmed by the therapist who agreed that the rather superficial, overly "popular" initial record represented an evasive pre-group-formation phase. At the nine-month point, the group was more actively grappling with psychosexual anxiety, possibly reflected in their rejection of cards VI and IX, but still having to come to grips with authority (therapist vs. group) issues, (which may be indicated by the unchanged responses to cards IV and VII.)

In a detailed comparison of two marriages which used the traditional Rorschach both individually and in Interaction (Roman & Bauman, 1960), the protocols reflected the disparate qualities of the two couples in ways that were not evident from their individual records but were consistent with the couples' manifest behavior. These protocols were interpreted "blind" by two experienced clinicians who felt that the records were internally con-

sistent and could, in their experience, have been produced by individuals.

Under experimentally controlled conditions then, the Interaction I.Q. is found to act at least in some ways like the individual I.Q. Clinical impressions support this finding as regards the Interaction Rorschach.

Assaying group products as though they had been produced by individuals has, to this extent at least, proven feasible and shows some promise of conceptual validity. A number of unanticipated extra dividends (at least three) have accumulated, however, which may prove even more useful and interesting.

First, the development of new, objective approaches to established clinically useful concepts,

Second, the derivation of group process scores inferentially from test products, and

Third, modification and innovation of psychological concepts.

1. The contribution of group product analysis to the clinical concepts of Potential and Efficiency.

In the assessment of individual intellectual functioning, clinicians have long realized the importance of assessing the representativeness for the subject of the

particular measure being interpreted. As a result of their alertness to influences of situational and intrapsychic stress as well as organic interference with intellectual functioning, they developed such concepts as intellectual potential and efficiency. These assessments have been facilitated in various ways, as by measures and estimates based on tests at other times in the patient's life, by his educational and other achievements or by current variability of functioning (through inter- and intra-subtest scatter). The "Hold - Don't Hold" approach developed by Wechsler (1944) represents an ingenious but not too successful psychometric approach to this problem.

The Interaction Testing procedure provides, for groups, a direct psychiatric approach to Potential and Efficiency. Interaction Testing involves, first, the individual testing of each group member, followed by testing of the group as-a-group with the identical items.

In I.Q. testing of marital pairs for example, pro-rated verbal I.Q.'s based on Comprehension and Similarities Subtests of the Wechsler-Bellevue or WAIS were used, leading to development of the following scores:

Husband I. Q. — derived in standard manner.

Wife I.Q. — derived in standard manner

Couple's Interaction I.Q. — the score, from their joint protocol, derived as for individuals.

Couple's Potential I.Q. — that "best" score which the couple would obtain if they consistently selected, in Interaction, the better of their two individual responses.¹

The Couple's Intellectual Efficiency: the arithmetic difference: Potential I.Q. minus Interaction I.Q. Intellectual Efficiency can thus be seen as an estimate of the degree to which the couple uses its available (I.Q.) resources in the given task.

Empirically, we have found (Bauman, Roman, Borello, & Meltzer, 1963) that the marital Potential I.Q. is as reliable as

Individual and Interaction I.Q., (i.e., $rel = .85$), and that Intellectual Efficiency is reliable at a significant, but much lower level ($rel = .50$). While this latter value is poor for predictive purposes, it does indicate that couples vary measurably in the effective utilization of their component individual skills.

We find couples, for example, whose joint score exceeds that of their "brighter" member, and others where the joint score is lower than that of the "duller" spouse. Some evidence for the utility of the Efficiency score was found in a comparison of three diagnostic groups of couples (Roman, Bauman, Borello & Meltzer, 1965). In ascending order of intellectual efficiency these groups were, first, couples having a hospitalized or formerly hospitalized psychotic spouse; second, couples having a hospitalized or formerly hospitalized non-psychotic spouse. The most efficient of the three groups of couples were "normals". These group differences in marital efficiency do *not* appear to be related to individual I.Q. measures (which do not vary with diagnosis).

The possibility of using a similar approach to Rorschach potential and efficiency may be seen in the comparison of two married couples who, having taken Interaction Rorschachs (Roman & Bauman, 1960), are contrasted in Table 2, which presents summaries of their scores on the Davidson Adjustment Scales.

The Davidson Adjustment Scale is a 17-item checklist devised for rating psychological adjustment from individual Rorschach psychograms. Scores range from 0 - 17, higher scores representing better adjustment. (Davidson, 1950).

Couple B's scores are: H = 5; W = 6; I = 4; Potential = 7; Efficiency (P-I) = 3. The face-value implication, that Couple A is better adjusted both as a marriage and as individuals, is borne out by clinical impressions. The implication, however that Couple A makes better use of its resources, also strongly suggested, is much more difficult to validate clinically, since Couple B gave evidence in many ways of constructive mutual support, which is difficult to assess quantitatively.

2. A second "dividend" which has accrued from the focus on Interaction *Product*

¹ This is only an estimate of potential, since the couple might, on some items, produce a response which is superior to that produced by either spouse alone.

Table 2
Davidson^a
Rorschach Adjustment Signs

	Marriage A				Marriage B			
	H	W	HWI	Pot.	H	W	HWI	Pot.
1. M greater than FM or M equal to FM					x		x	x
2. 3 or more M (including addit.)		x	x	x	x	x	x	x
3. Sum C more than Fc plus c plus C'		x	x	x	x	x	x	x
4. F % between 30 and 50		x	x	x				
5. Dd plus 5%, 10 or less	x	x	x	x	x	x	x	x
6. 4 or more P (less than 30% R)	x		x	x		x		x
7. R between 20 and 40								
8. FC more than CF or FC equals CF	x		x	x				
9. 2 or more FC			x					
10. No pure C	x			x				
11. % R for VIII, IX, X between 35-60								
12. FK plus Fc 2 or more	x		x	x		x		x
13. W : M equals approx. 2 : 1			x					
14. A % 50 or less		x	x	x				
15. No color shock	x		x	x				
16. No shading shock	x	x	x	x				
17. No refusals		x	x	x	x	x		x
Total No. Signs	7	7	13	12	5	6	4	7

Key: H Husband W Wife HWI Interaction husband-wife

Note: For couple A, the distribution of scores is as follows: H = 7; W = 7; Int. = 13; Pot. = 12; Eff. (P-I) = 1. (Higher numerical scores indicate lower Efficiency. The negative value for Efficiency is an example of an instance where individually-derived Potential underestimates the couples actual ceiling.)

^a The Davidson Adjustment Scale is a 17 item check list devised for rating psychological adjustment from individual Rorschach psychograms. Scores range from 0 17, higher scores representing more signs of adjustment.

Analysis, is the demonstration that *products* can be used to derive inferred *process* scores, and that these process scores are reliably characteristic of couples as well as meaningful in attempts to understand them (Bauman, et al, 1963; Bauman & Roman, 1964, 1966).

Derived from Interaction I.Q. data, the interaction process scoring system is based, for each item, on a comparison of the Interaction Test response with the individual responses previously produced by husband and wife alone. With this system, all of the couples' decision-making can be subsumed under four process categories: Dominance, Combination, Emergence and Reinforcement.

Dominance is scored when the Interaction response contains one member's individual response and the absence of the other's individual response.

Combination is scored when elements of both members' responses in whole or in part are found in the Interaction response.

Emergence is scored for the presence of a new idea in the Interaction response.

Reinforcement occurs when the same response is given by each individual and by husband and wife together.

The outcome of the decision-making process is also scored by assigning the symbols +, -, and 0 to each response. These are assigned operationally simply by comparing the scores obtained on the 3 protocols for each item; i.e., husband, wife and Interaction. (See Table 3).

Two research findings will help to illustrate uses of these interaction process scores. A study of 50 married couples, each having one member psychiatrically hospitalized (Bauman & Roman, 1966) revealed the following patterns of Dominance scores: It was found that husbands dominate more than wives, that more competent (i.e. higher I.Q.) spouses dominate more than their less competent mates, and that non-patients dominate more than their patient-spouses do. A post-hospitalization follow-up of 16 of these couples (Roman, Bauman, Borello & Meltzer, 1966) found the Dominance patterns unchanged for sex and competence, but the effect of (formal) patient-status on Dominance had disappeared.

Since the *competence* of patients and non-patients (i.e. individual I.Q.) had not changed, the changed Dominance score appeared to be reflective of changed marital social conditions involving society's withdrawal of the status of "official patient" from one of the spouses.

In the same study, it was found that post-hospital interaction process contained significantly more reinforcement (i.e. agreement from individual to Interaction protocols) and significantly less negative emergence (i.e., creation of new, but inferior responses) on the Wechsler-Bellevue. These findings are consistent with others involving larger groups of couples in our research and with others' reports (Ferreira & Winter, 1965).

3. The focus on interaction products has, finally, stimulated directions of conceptual thinking that may be useful. The analogy between individual and group, which here gets some rudimentary support, can lead to the following researchable questions:

Does the group manifest relatively enduring as well as transient qualities of mood and offer true responsiveness, cognitive and perceptual style, intelligence, intra-and inter-group life? Are they measurable? Can they be derived or inferred *entirely* from individual member assessments? Are there group measures which are relevant to the well-being and growth of the group's members?

From another point of view: is it useful to turn the conceptual tables and consider the group as a model for understanding individual behavior? For example, can the stalemated but energetic bickering between spouses that one almost automatically labels "obsessional" be used to understand individual obsessional doubting as a conflict between internalized selves? Can the production of a contaminated Interaction Rorschach response by a normal mother and her schizophrenic son (Roman & Bauman, 1960) shed any light on the intra-psycho processes which lead to a perceptual or conceptual contamination in individuals?

Is the distribution of Dominance (or other process) behavior within a group a stable function of *group* properties which supersede or regulate the individual behaviors? For example, are traditional

Table 3

Means, Standard Deviations, and Reliabilities¹ of Process Scores
of 50 Couples on 44 Items of the Wechsler-Bellevue Intelligence Scale²

Process Scores ³	Total D	D _H	D _W	E	C	R	-	+	0
Mean									
Form I (22 items)	13.20	7.92	5.28	5.34	1.20	3.06	4.86	6.56	10.58
Form II (22 items)	12.98	8.12	4.86	5.28	1.54	3.22	4.92	7.48	9.60
Standard Deviation									
Form I	2.81	3.71	3.07	2.71	1.26	1.63	2.23	2.01	2.16
Form II	2.86	3.66	2.53	2.93	1.53	1.96	2.10	2.29	2.65
Reliability ¹	.54	.76	.84	.71	.68	.51	.48	.72	.57

Note: Reproduced from: Harrower, M., Vorhaus, P., Roman, M. and Bauman, G. *Creative Variations in the Projective Techniques*, Charles C. Thomas, 1960.

¹ Split-half reliability with Spearman-Brown correction 22 using alternate forms of the Wechsler-Bellevue: 22 Form I and Form II items.

² 24 items of Similarities Subtest and 20 items of Comprehension Subtest.

³ Qualitative Process Scores in Couple Interaction:

D_H = Husband Dominance = Interaction response contains husband's individual response in the absence of wife's individual response.

D_W = Wife Dominance = reverse of D_H.

D_{Total} = Husband Dominance + Wife Dominance.

E = Emergence = The presence of a new idea in Interaction not present in either individual response.

C = Combination = Elements of both member's individual responses are found in Interaction.

R = Reinforcement = The Same response in Interaction as both individual responses.

Quantitative Process Score in Couple Interaction:

- = Negative = The Quantitative Score (2, 1, 0) was lower in Interaction than one or both individual responses.

+ = Positive = The Quantitative Score (2, 1, 0) was higher in Interaction than one or both individual responses.

0 = Same = The Quantitative Score (2, 1, 0) was the same in Interaction as both individual responses.

dominance and submission as individual traits erroneously conceived since they are individually anchored? Might Dominance better be viewed, perhaps, as a kind of collaborative or transactional manifestation, in which responsibility *cannot* be assigned differentially to the individual members—in which case the roles of "dominator" and "submitter" become illusory?

Is creativity or the generation of new products best seen as a result of genuine contact, perhaps involving some interpenetration or fusion of boundaries between or among systems, whether these systems be conscious-unconscious, inter-

nalized selves, or actual persons such as marital partners?

Can group behavior be factor-analyzed, to yield analogous or identical factors to those found in individuals? If so, do the factors best correspond to (or "reside in") individual members (or intra-individual selves) or some other predictable distribution across members?

In summary, this paper presents some results of a focus on group products in applying individual clinical tests to small groups and families.² Interaction Testing

² Another use of Interaction Testing Products has been developed by Dr. Joseph Richman of

with both I.Q. and projective tests may promote fruitful convergence and cross-fertilization in the fields of clinical and social psychology. Some implications are drawn from the possibility that individual and group organization are in some ways, identical.

Put in another way, Interaction Testing can be used to explore some possibilities arising from thinking of the individual as a special instance of group organization and vice-versa, (i.e., thinking of the group as a special instance of individual organization), in investigating clinical and personality problems. We are well-warned of the scientific danger of facile analogizing which may obliterate important, real differences between individual and group as levels of integration. It may be in order, on the other hand, to suggest that we not become phobic, while being alert to inter-level differences, and thereby fail to evaluate evidence for transferability if not of isolated characteristics, then of system principles between these levels.

Albert Einstein College of Medicine. Dr. Richman, after administering Interaction Testing to couples, then interprets their results to them, often using their actual Interaction Products in the presentation or confrontation. In one case, to be published, the husband's Rorschach contained an overabundance of human movement responses while the wife's record was essentially a color record. In interaction, they produced no movement or color responses; the record was 100% F. In the post-testing counseling session Dr. Richman utilized these product scores to underline their tendency to under cut each other, and their failure to realize the potentially rich relationship which was possible for them.

REFERENCES

- Bauman, G., Roman, M., Borello, J., & Meltzer, B. Interaction testing in the measurement of marital intelligence. *Journal of Abnormal Psychology*, 1967, 71, 6, 489-495.
- Bauman, G. & Roman, M. Interaction testing: Manual of administration and scoring. Mimeographed, 1964.
- Bauman, G. & Roman, M. Interaction testing in the study of marital dominance and its dynamics. *Family process*, September, 1966, 2, 230-242.
- Cattell, R.B., Concepts and methods in the measurement of group syntality. *Psychological Review*, 1948, 55,
- Davidson, H. H. A measure of adjustment obtained from the Rorschach protocol. *Journal of Projective Techniques*, 1950, 14, 31-38.
- Ferreira, A. & Winter, M. Family interaction and decision-making. *Archives of General Psychiatry*, 1965, 13, 214-223.
- Roman, M. & Bauman, G. Interaction testing: A technique for the psychological evaluation of small groups. In M. Harrower, P. Vorhaus, M. Roman, & G. Bauman, *Creative variations in the projective techniques*. Springfield, Ill.: Charles C. Thomas, 1960, 93-138.
- Roman, M., Bauman, G., Borello, J., & Meltzer, B. Interaction testing: Comparison of "normal" and "pathological" couples on intelligence test performance and decision-making process. Paper presented at the Psychology Colloquium, Lincoln Hospital Mental Health Services, New York, 1965.
- Roman, M., Bauman, G., Borello, J., & Meltzer, B. Interaction testing: Marital decision-making during and after psychiatric hospitalization of a spouse. Mimeographed, 1966.
- Wechsler, D., *The measurement of adult intelligence*. New York: Williams & Wilkins, 1944.

Role Complements and Changes in Consensus Rorschachs

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When two or more people attempt to agree upon what an inkblot might be, the process of achieving consensus yields a protocol of their existential encounter. The effort to reconcile differences and evolve mutually acceptable definitions taps spontaneous qualities, which the members structure in typical fashion in terms of their individual and group preconceptions. And because these preconceptions are relatively enduring, the behavior observed in a consensus Rorschach has implications for other group goals.

In my presentation today, I wish to consider three kinds of questions that consensus Rorschach protocols have raised for me. Hopefully, I can present at least three answers.

How Can You Analyse The Verbal Transcriptions of the Rorschach Protocols?

If you have ever audited tape recordings of family group therapy, or even individual interaction, you are aware of the large amounts of words exchanged, the abundance of information, and the lack of conceptual order; all of which makes auditing electronic material excessively tedious. The same problems exist for recording of the interaction occurring in a Rorschach. The need for conceptual structure and abstraction is the focus of our efforts at the Central Research Unit. My colleagues here at this panel have attempted to deal with this issue in various ways. For example, Bauman & Roman tried to score for decision-making (Bauman & Roman, 1964; Roman & Bauman, 1966), while Singer rates the style of handling attention (Singer & Wynne, 1965).

The solution I wish to propose had its origin in a paper presented last year to the California State Psychological Association (Cutter, Farberow, & Sapin, 1967) where we compared the individual Rorschachs of a mother and that of her son who later committed suicide. In contrasting their responses to the same

inkblots we noted complementary qualities of response. Where she sees people pulling, he saw them hanging on. Where she sees a rug hanging on the wall, he sees a stingray with a barb hanging by its side for protection. Since the son's life style was one of "always hanging around," I am sure this clinical audience will have no difficulty anticipating the veteran's suicide by hanging.

My point here though is that we can juxtapose the context of responses to the same inkblots by symbiotic partners and observe complementary meanings in the pair of reactions. I call this approach the method of content-polarities since the complementary quality of the reactions can be construed as polar opposites of a dimension, or more simply a theme. Now each pair of content-polarities can be taken as a set of complementary expectations for the area of interaction implied by the specific response. The array of such expectations built up by the total pairings of responses to the Rorschach can then be regarded as a profile of the symbiotic roles played by the pair. In my illustration it is the mother and son roles that we were working with.

In looking at consensus protocols a similar complementary quality is also present in terms of the controversies the group as a whole express about the definitions of each inkblot: regardless of who speaks the identified poles of an explicit or implicit disagreement becomes a definition of a theme or content-polarity.

What are the clinical implications of a content-polarity? At the very least each is a conflict shared by the group. Membership imposes mutually exclusive expectations on the individual, but only to the degree that he is significantly involved in this group. I conceive of three possible alternatives in behavior. The first is simply a resolution of the presented conflict and consequently no need to react in either pole; the second is the expression of a pre-

ferred pole; and the third is ambivalence with reactions apparent in both poles.

An array of these mutually exclusive expectations such as occurs in response to the ten inkblots can describe a pair of roles that are opposites for that group. I call these roles and role-complements. I am suggesting that consensus Rorschach protocols provide information that defines the symbiotic nature of these role-pairs which are imposed on all members of that particular group, but accepted in varying degrees by each individual.

The individual's preferred alternatives can be studied by the traditional Rorschach and the clues perceived as the subject's response to his group's conflicts. The relation between the group's expectations and the subject's complementary reactions, define the role and role complements in that group and provides a source for explanatory concepts in the study of problem behavior.

An analysis of individual protocols in relation to consensus Rorschachs by this framework permits existing clinical knowledge and skill to be applied in a more powerful manner to the social context in which problem behavior occurs; namely the group.

A further advantage of the content-polarities approach is its convenience as a summary of the interaction in terms of the content. A list of all the themes along with the consensus reached for each inkblot provides a rather practical summary of the total content. Naturally, the non-verbal information is minimal. However, this system permits a relatively easy survey of the entire protocol and the comparison of several sets by one investigator with a minimum of effort. The advantages of this abstraction will be apparent in Tables 1 and 2, where consensus and individual protocols are summarized for the two cases I will discuss shortly.

What Are the Effects of Different Groups on Consensus Protocols?

It is only familiarity that has led the previous investigators to study family groupings rather than other kinds. Blanchard's (1959) use of a peer group illustrates the value and range possible. He quite rightly chose the group that was

most germane to his research interest. Since we have an almost infinite variety of groups to select from the question then occurs, do different groups effect consensus protocols in different ways? Stated differently; what are the variations one can expect where one subject who is our primary focus of attention participates in several different consensus groups? If such differences do exist, what is the core personality that can be presumed to persist through time? And does any Rorschach test elicit this?

We (Cutter & Farberow, 1967) attempted to study the primary question by administering a consensus Rorschach serially to five groups composed by selecting one alcoholic patient on the basis of convenience and then obtaining consensus Rorschach with; (a) three of his friends, (b) three of his roommates, (c) his wife, on two occasions, separated by six months, (d) a high-low status pair. We also obtained an individual Rorschach before and after the series.

In looking at these five consensus and the two individual Rorschach protocols you can see how helpful it is to reduce all the interaction to the consensus and content-polarities alone. This has been done for you in Table 1.

Aside from the manifest differences in literal content we were able to detect; (a) a greater variety of content-polarities with friends and peers than with wife and status group, (b) the degree of effort expended by the *S* increased to a maximum with his friends, (c) the number of consensus decisions dominated by our subject increased in number, and quality, as he moved from friends and peers on the one side to wife, and status group on the other, (d) aside from popular responses there were some remarkable differences in consensus contents; for example, on Card VI there occurred microscopic sewage water, totem pole, and sidewinder missile while on Card X there was blue brassiere, goat, underwater marine life; for his friends, his roommates and the status group, respectively, (e) using the content-polarities found in each context we inferred a prevailing expectation for each group by our primary *S*. These are: irresponsibility

with friends, affective distance with roommates, a victim with his wife, and a parasite with the status pair, (f) differences in communality between the different contexts were also apparent with the greatest number of common elements found between the *S*'s individual profile and his wife's consensus; the least with his friend's consensus. Similarly, the incidence of common occurrence in terms of content-polarities was least between himself and the status group.

In the face of these group originated differences, the question naturally occurs, does the Rorschach protocols thus derived reflect any of the enduring aspects of personality, and if so, what might these be? My answer is a resounding yes! The consistencies I observed will now be described:

1. Treating each consensus Rorschach as though it were obtained from one person, we tabulated the sums and balances of the traditional Rorschach scoring for each group. Surprisingly, to me at least, these were all relatively consistent: the number of responses, the *F* per cent, the *A* per cent, the sum *C, P, O*, and so forth, were remarkably close to each other. The greatest difference in all the profiles occurred in the number of *M* which varied from a high of four with his friends to a low of one with his wife.

2. The Bauman-Roman Scoring system yielded consistent re-enforcement scores which is a consensus that repeats the occurrence of a prior individual Rorschach response. However, I should add that these occurred principally in terms of popular responses to Cards, I, II, V, and VIII. An additional consistency was the persistent deterioration of our *S*'s consensus response to Card IV when compared to his individual reaction which in itself was highly original. While this may be partly an artifact of a difference between a superlative and pedestrian reaction, the fact is that on each consensus the quality was poorer. We construe this deterioration as an example of "leveling" in terms of the Levy-Epstein concepts (1964). In their system our *S* facilitated "group equilibrium" by surrendering some of his individual expressions. As an example of "leveling," his reactions indicate the price he

pays for facilitating group agreement. In the three individual Rorschachs that were obtained subsequent to all the consensus administrations, his first and original response to Card IV never recurred.

3. In terms of content-polarities the number of themes elicited three or more times in each consensus administration was quite small. Seven in toto, of which all occurred with his friends, six with his roommates, four with his wife and four with the status group.

4. The theme that recurs most persistently is the conflict in expectations between work and play. From this we hypothesized that a dominant theme in any role he attempts will be the resolution between the conflicting expectations for work and for play.

5. Since we postulate an individual adaptation to group imposed conflicts of expectations, we can identify our patient's mode and level of adjustment by studying the content-polarities of the consensus protocol and noting the *S*'s individual reactions on his standard Rorschach protocols. Thus, we relate our *S*'s episodic alcoholism to his persistent effort to assert a work preference, which is in conflict with each of his group's polar interest in play. The conflict, I should add, is imposed by his group and subsequently incorporated by him. He generally asserts the personal preference for work but the episodes of intoxication represent the other side of the conflicting expectations to play.

6. While differences attributable to the context are apparent, consistencies also recur that reflect some prevailing quality of our *S* and these differences and similarities were elicited by the combined individual and consensus Rorschach methods.

What Are the Connections Between the Group's And the Individual's Protocols When Obtained Separately?

If there is indeed an affective bond between family members of a primary group, as we all generally presume, how will this manifest in a consensus Rorschach where the *S* is absent? What will be the connection between the consensus protocols of the family and the individual's obtained at a different time?

Table 1
Abstract of Serially Administered Consensus Rorschachs to an Alcoholic Patient and Five Groups to Which He belongs

Cards— Individual	Friends	Roommates	Wife	Status	Individual (10 Days Later)	Wife (6 months later)
I Wild bat.	(Bat) Deteriorated bat/ Devil's mask.	(Bat) A. Bird, what's/P-38 left of one. B. Animal/Fossil.	(Bat) Animal/Crab.	(Bat) Clean/Came off a dirty place	Bat.	(No Consensus) Flying mammal/ Spider head.
II Tigers and Shadow	(Sheep) 2 Ovaries, vagina/sheep fighting, blood off their paws.	(Pelvis) A. Shadow/reflection B. 2 dogs, bloodhounds/ Skin cut in half. C. Bad kidneys/skeleton D. 2 Bears/2 birds	(Wooley Bear) Puppy/mouse.	(Butterfly) Furry/wounded.	2 Animals, fancy, dog or bear wounded	(Bear) Teddy bear/bear in funny papers.
III Two people conversing	(2 Women) A. Women/men (work- ing) / (tug of war). B. Backbone/hearts. C. TV monsters/ 2 dancers.	(2 Women) A. Vase/bow tie. B. 2 women/2 guys (working) / trying C. Wash bench/beating drum (laundry) / (slaughter).	(2 Women working) Shoes/breast.	(2 Women working) A. Crab/human. B. Cremated/boiling	Two women working	(2 Women) Working/dancing
IV Man riding a motorcycle sure got big feet.	(Cow Hide) Flying dragon/ X-ray of spine.	(A Hide) Cross section of a flower/ antenna, face of a grasshopper.	(Lobster) Snail, squashed, sick/hide.	(Hide) Bug/snail.	Hide or bear.	(No Consensus) Lobster/snail
V Butterfly in flight.	(Butterfly and ladies) No content— polarity.	(Butterfly) No content— polarity.	(Butterfly) No content— polarity.	(Butterfly) Bat/flying mammal.	Bat flying.	(Bird) No content— polarity.
VI Buffalo skin/ stretched out.	(Microscopic sewage water) Cheeks of an ass/mouth of a grasshopper, open.	(Indian totem pole, etc.) A. Hide/in ground, going down. B. Insect going through a bubble, drill sting going in/brush and water coming out	(Skin) A. Butterfly/ bird. B. Dolls/dragon fly	(Missile) No content— polarity	Indian design on top of hide.	(Hide) No content— polarity.

Table 1 (Continued)

Cards Individual	Friends	Roommates	Wife	Status	Individual (10 Days Later)	Wife (6 months later)
VII Inlet you would see on a map.	(Poodle) A. Lock/Hasp, Post. B. Penis/Vagina. C. Cracker. (animal/Poodles on head).	(Wig) A. Hairline/wig B. G. Washington/Little Iodine. C. Cloud/Smoke. D. Harbor/Lake. E. Dogs/Rabbits. F. French Poodles/ Scotch terrier.	(Scotty Dogs) Puppy dog/ Harbor.	(Vaginas) A. Scotty/French Poodle. B. Standard/ larger size. C. Dogs/harbor.	Inlet or harbor map.	(Puppy Dogs) Island map/ 2 puppy dogs.
VIII Opposum, crossing the creek and this would be his re- flection.	(Animal and Sex Symbol) Cat/mangy rat (Evil) (Cute). (Up X-mas tree) / (In pit). (Climbing tree) / (Crossing river).	(Animal) A. Egyptian Cleopatra boat/flowers in Japanese garden B. Emblem/coat of arms. C. Girl's mask/skull bone.	(Animal) A. Land/water. B. Wild/Walt Disney.	(Animal Walking) Wolverine/buffalo. (Crawling) / (Walk- ing).	Varmit crossing a stream.	(Animals) Crossing stream/ in water.
IX Man in a pool of water and he's pushing an object out of the water.	(Wooded Area and Violin) A. Old witch/Fu Manchu mustach (Faces) / (masks). (Blowing on a pipe/(Violin)). B. Sand or desert/ Wooded area with a stream.	(Flower) A. Alligator/dragon. B. Guy/woman. C. Cross section of flower/Chinese design	(Man at Work) No content- polarity	(Man Working) A. Animal/bug. B. Reflection/ Cloud Form. C. Blooming flower/ explosion	Little man working.	(Baby) Little man/ baby.
X Sea view under water like an aquarium.	(Blue Brassiere) Inlets/water life.	(Goat) A. Tower/Napkin, oriental. B. Nanny goat/Mary's lamb. C. Moon people/Sea life. D. Goat peeking/billy goat	(Aquarium) Fish/crabs	(Marine Life) Native/Foreign	Sea life	(Aquarium) Sea life/bug eating.

Table 2
Consensus and Content-Polarities derived from Family of Fourth Subject

Family:		Both Parents, older sister, younger brother		Victim:		Daughter (Attempted suicide 7 times)	
Dates of Rorschach:		January 9, 1967		May 11, 1967		November 13, 1957	
Ages:		69, 59,		40, 33,		39,	
CARDS		CONSENSUS		CONTENT-POLARITIES		INDIVIDUAL RESPONSES	
						29,	
						INDIVIDUAL RESPONSES	
I	NC	Pagoda — Ape, Human Body.		2 little imps.		Female praying for help, crying.	
II	Two people facing	Animal — People		2 old women battling over fence.		2 old women gossiping over fence, and cute puppies.	
III	NC	2 Animals — 2 Africans in ritual French poodles Puppets.		Rare tropical bird. Blobs of some kind.		2 cannibals, female, dancing. Children sticking out their tongues at each other.	
IV	Monster	Apeman — Dracula, ominous.		Dog hanging over precipice, looking for master.		Something from Science Fiction, horrible, terrifying.	
V	Bat	Human monstrosity — female creature. A mind with great imagination — Art form.		2 gals leaning against the rocks at Santa Monica Beach — legs sticking out.		Butterfly, legs of a human. 2 little jokers at side poking noses at each other.	
VI	NC	Fur rug on floor — furry animal squished. Ordinary human being — Mermaid, half wings, half human.		Another dog looking over a precipice. Caught on a dark kind of a shelf.		2 cliffs, drop off, don't know what for, Pacific Palisades. Caterpillars, garden variety.	
VII	Children	Elves: Cute urchins — Imp-like. Deformed — Abstract.		2 little imps. Looks like they're on teeter totter.		2 little children, ice cream over face. Not too clear. Might be sitting on teeter totter with puppies in argument, hands raised to strike.	

Table 2 (Continued)

Family: Both Parents, older sister, younger brother

Victim: Daughter (Attempted suicide 7 times)

CARDS	CONSENSUS	CONTENT-POLARITIES	INDIVIDUAL RESPONSES	INDIVIDUAL RESPONSES
VIII	NC	Bears, Butterfly – Rodents, rats. Skeleton, morbid – Jawbone, escape. Out of hell fire – Into decay.	Mice Trying to get out of cave. Don't like that one at all.	Baby mice. 2 wolves or coyote howling to each other. Water, boat sinking, fire.
IX	Vegetation	Lobster – Fire Flowering tree – Held up by a human creature.	My dear father who is mad at me. In process of screaming at somebody.	2 witches, clowns, 2 faces I've seen before. Explosion, boat sinking.
X	NC	Fortress, unaware – Attacker with claws. Sea spectacle, party – something foreign, pleasant, color – bulls, monsters, black	Ridiculous! 2 cooks with hats. Having an argument over who's going to cook what – insects.	Pretty; Autumn leaves falling. Cavaliers of King Arthur's Court going out to battle. 2 adorable little girl twins, babies drinking milk with pug noses and bonnets. Pink rabbits looking out of hole to see if winter is coming.

NC = NO CONSENSUS

We had in our files at the Central Research Unit, the individual Rorschach protocols of Veterans who had committed suicide. We have been systematically interviewing those survivors who live in California and who are willing to cooperate with us. I wish to report now on our findings of four cases thus obtained (Cutter, 1967).

There are three kinds of connections that seem possible between the two sets of protocols: (a) every consensus in the group is reflected by common elements in the individual protocol; (b) every content-polarity in the group is reflected by common elements in the individual protocols. Data on these first two connections were obtained by a simple frequency count of common elements found in the abstracted Rorschach protocols described earlier. While I did not anticipate complete isomorphism in content, a significantly large proportion of each consensus and content-polarities were matched by common elements in the Individual Rorschach of the four cases I analysed. Interestingly, the length of the time interval between protocols which varied from 16 years to 5 months, didn't seem to affect the incidence of common elements. On two cases, there were, in the medical records, two individual Rorschachs. In one case the interval from the consensus protocols were 16 and 10 years. The shorter interval actually yielded less communality than the longer interval. The reason for this was that the second Rorschach was taken at the time of a divorce and reflects a change in the victim's relationship to the first wife and family. Thus, attenuation of communality between a member and his group is more likely to be associated with changes in their relation, rather than time per se. A similar trend was apparent in the second case.

Parenthetically, the sheer number of consensus responses with or without popular content, vague or inadequate in quality, occurs less often the more disturbed the patient appears to have been. I used as criteria of adjustment, the rather superficial, but relatively dependable and available, indices of (a) age at death and (b) years between the first psychiatric admission to the Veterans Administration

Hospital and date of death. Both indices were directly associated with the number of attainable consensus elicited by the family and are compatible with degrees of psychotic impairments.

A third connection is the mode of response the patient uses in coping with the areas of conflict apparent in the consensus Rorschach. In terms of individual Rorschach data, the patient can respond with content that reflects no common element, asserts one pole of the group's content-polarity, or reflects both poles of the group's content-polarity.

A frequency count of the four Ss studied thus far, yielded no apparent differences in the occurrence of each category. However, the first victim's second Rorschach (the man who was divorced from his first wife at the time) showed no ambivalence and a larger number of resolution alternatives, i.e. reactions with no connection to the family Rorschach content-polarities. I believe this documents further his growing alienation from the family and an effort to work out independent answers to the conflicts he encountered with them. It is this relative independence that explains the absence of suicidal behavior during the first wife's divorce. This same victim later committed suicide at the time his second wife planned to divorce him. Unfortunately, we have not, as yet, been able to secure the second wife's cooperation for a consensus Rorschach.

In the series of four victims studied here, I attempted to relate their Rorschach responses to areas of family imposed conflicts and use these as explanations for known descriptive facts of the victim's suicide. I illustrated this procedure by Case four, given as Table 2 and Table 3.

In looking at the victim's two sets of individual responses in relation to the parental family's consensus, I experience a profound sense of encounter even though I have not had any clinical contact with her or any member of her family. I perceive her choice of suicidal behavior as increasingly superficial "calls for help." Within a three-year period, I anticipate her completion of self-termination by a method quite different from her past attempts, and quite unorthodox for a

Patient is still alive and female in contrast to the other three cases. At 29, she attempted suicide three times by overdoses of sleeping pills in a twelve-month interval. She attempted again in 1959, 1965, and 1967, by overdose, gas and combination of pills and alcohol. Some of these attempts are considered as having an excessive intention while others are minimal. Manipulative elements are apparent in all. Currently she is working, not drinking, not addicted as earlier. She is divorced, mother of a six year-old son; she has a history of promiscuity starting at age 17, she is now 39.

Self-termination is predicted by the method of jumping from a cliff within the next three years.

This 39-year-old female has attempted suicide seven times in the last ten years and with varying degrees of intent to achieve self-termination. Why did she elect these modes of "calling for help"?

What will cause her to complete a suicidal attempt, besides chance?

If she completes a suicide attempt will her mode be different?

Card I: The family conflict imposed on each member is that between expression of impulses directly or as animals might, versus sublimation into intellectual or spiritual themes. The victim cries for help when she was 29, but is now more impish in her self-expectations and in response to family conflict in this area.

Card III: Natural-ritual and natural-manipulation conflicts are resolved by the victim's impish behavior at 29. Currently, she blocks to the same stimuli.

Card IV: Conflict between natural and supernatural fears resolved by victim as Science Fiction at age 29, but now at age 39, as a natural impulse to seek master.

Card VI: Conflict between "skinned and squished" expectation resolved by ominous cliffs at age 29; but at age 39 there is the same as Card IV plus a "caught feeling."

Card I: The family imposes a conflict of expectations with respect to expression of impulses, to which she originally reacted with "prayer," "tears," and currently with "impishness," i. e. manipulation.

Card III: The family conflict of natural-ritual was originally taken, by her, as a cue to engage in "cannibal behavior" (Oral aggressiveness) (Ingestion of pills).

Currently she is reacting in unrelated terms as "rare tropical bird." However, the family conflict between pets and puppets evoke impishness and now produces blocking, i. e. "blobs". She will not be able to handle future manipulation or indulgence by her family.

Her second Rorschach resolution of family-imposed conflicts indicates a shift towards more independence and less ambivalence. This in itself implies less influence on her by the family.

Cards IV and VI: Her identification with the dog-master theme and her affect towards father on Card IV suggests that paternal loss, through death or withdrawal will trigger stronger self-termination behavior.

Card III: The rare bird concept implies she will need to respond unpredictably.

menopausal woman. The evidence for my prediction and explanation is presented in Tables 2 and 3. I will be very pleased, indeed, to acknowledge my error in three years from this date.

The approach I described permits abstractions from the reference group of the encounters most relevant to the individual's choice of problem behavior. The approach can be applied with the identified patient in the group, absent from the group, or in relation to several groups. The essential quality is the use of a consensus Rorschach method.

REFERENCES

- Bauman, G. & Roman M. Interaction testing in the study of marital dominance. *Family Process*, 1964, 3, (1), 230-242.
- Blanchard, W. The group process in gang rape. *Journal of Social Psychology*, 1959, 49, 259-266.
- Cutter, F. Consensus Rorschach with survivors of completed suicides. In preparation, 1967.
- Cutter, F., & Farberow, N. L. Serial administration of consensus Rorschachs to one patient. *Journal of Projective Techniques and Personality Assessment*, 1968, 32, 358-374.
- Cutter, F., Farberow, N. L. & Sapin, D. Explaining suicide by Rorschach comparison with survivors. Paper presented at the California State Psychological Association meeting, San Diego, California, January 27, 1967.
- Levy, J. & Epstein, N.B. An application of the Rorschach test in family investigation. *Family Process*, September, 1964, 3, (2), 344-376.
- Roman, M. & Bauman, G. Interaction testing: Progress report and manual for administration scoring. Yeshiva University, Division of Social and Community Psychiatry, Albert Einstein College of Medicine, New York, July, 1966.
- Singer, M. T. & Wynne, L. C. Thought disorder and family relations of schizophrenics. III Methodology using projective techniques. *Archives of General Psychiatry*, February, 1965, 12, 187-200.

The Consensus Rorschach and Family Transaction¹

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Two studies using consensus Rorschachs have been completed recently to which I wish to call attention. The first, conducted at St. Elizabeth's Hospital, Washington, D.C. by Rosenthal, Behrens, & Chodoff (1968; Behrens, Rosenthal, & Chodoff, 1968), used the method with low socio-economic status families of both Negro schizophrenic and normal controls and Caucasian schizophrenics. The families were tested at home and included whatever family members were available for testing. (Not all the families contained the natural fathers of the index Ss.) The authors were able to distinguish families of schizophrenics from those of normals by analysis of the communication patterns shown by the family members during the consensus Rorschachs in terms of attentional and meaning deviances.

Second, Loveland (1967) recently reported a method for scoring consensus Rorschachs with various combinations of Ss, without a tester present in the room. The scores obtained are based on the extent to which the parents facilitate, limit, or disrupt interaction during the testing procedure. Again, differences between families with schizophrenic offspring and those with nonschizophrenic offspring were found.

Rather than attempting to describe the various manuals and rating devices for assessing parental and family interaction which will be available elsewhere, I shall discuss some of our observations about how parents fit together as a pair and how they assist or fail to assist in a mutual moving toward sharing meaning (Morris & Wynne, 1962; Loveland, Wynne, & Singer, 1963; Singer & Wynne, 1963, 1964, 1965, 1966a, 1966b, 1968; Wynne & Singer, 1963, 1966; Singer, 1967.)²

In our work at the NIMH, family members are tested and interviewed individually, and the parents are seen as a couple as well as with other family members. Thus, there are available the projective test protocols and interview material, as well as verbatim excerpts from tape recordings of family therapy sessions, for a comparison of each individual's behavior alone with the tester and his interaction within the family group. Since much of our test analysis has focused upon communication patterns of parents, here I shall discuss primarily observations about parental communication. In consensus Rorschachs, conjoint research interviews, and excerpts from family therapy, two aspects stand out: (a) how parents constrict or facilitate each other's communication and (b) what each parent *fails* to do to counteract the other's deficiencies in communication tasks.

As previously described (Singer & Wynne, 1965), we have used the individual Rorschachs of each parent to predict clinical, overtly discernible features seen in their children. This has resulted in two kinds of studies. In the first, we have been interested in predicting the general classification of whether the family would contain a normal, neurotic, or schizophrenic index offsprings. In the second, we used detailed narrative descriptions to predict in considerable detail what we thought would be the clinical picture presented by an index offspring of a given sex. Also, a blind matching of tests of the offspring from these was carried out. Again we studied the individual Rorschach of the index members and made predictions about what the index member was like at an overt, or clinically observable level. Each of these predictive efforts was successful. It should be noted that the predictions were made from *tests* to presumed *overt* behavioral traits and not test-to-test performance. For example, we would make a prediction such as: "The young adult index son in this family is likely to be enduringly psychotic (a proc-

¹ Presented at a meeting of the American Psychological Association, Washington, D. C., September 3, 1967.

² The research and theories discussed here have been developed collaboratively with Dr. Lyman C. Wynne, Chief, Adult Psychiatry Branch, National Institute of Mental Health, Bethesda, Maryland.

ess schizophrenic with amorphous thinking). He is likely to be extremely slowed down. He will tend to express ideas in cryptic, abstract, non-visualizable ways. He may try to relate as a small boy. Occasional efforts as silly humor as a way to try to reach an adult will be present." No attempt was made to predict the kind of Rorschach to look for in terms of *M*, color, etc.

In this paper, I shall restrict my further comments to our observations on the interrelation of the individual Rorschachs and spouse Rorschachs. Most of our attention so far has been given to a comparison of individual and spouse Rorschachs from parents of schizophrenics, although enough work has been done with tests from parents of neurotics and normals to establish guidelines for crucial areas of comparison. It appears, at this point, that we are able to make *more varieties* of predictive statements about offspring from the individual Rorschachs of the parents than appears possible from the consensus Rorschachs of the same parents.

Analysis of individual Rorschachs reveals the kinds of communication mechanisms each parent uses as he tells something to a receptive, even passive listener. Here the parent displays the devices and terms he uses and the contents he is prone to think of in situations where he takes over and explains, lectures, or instructs a child. When the child (or in the individual Rorschach situation, the tester) is seen more as a listener than as a responder, the parent is less hemmed in by feedback. His preoccupations, his interests, his views, and his general style of phrasing ideas and directing his attention are easily displayed. In contrast, it appears to us that in the spouse Rorschach, the *roles* that each parent has *in relation to the other spouse* are highlighted much more than either's individual style of communicating. What these roles do to constrict or facilitate communication determines the range of behaviors each shows during the spouse Rorschach.

The parents of young adult schizophrenics do seem to box one another in, curtailing and constricting their potential range of behaviors during the spouse Rorschach. Each show much less variety of

behaviors than those displayed in the individual Rorschach. Almost distilled roles appear in the spouse Rorschach because of the "boxing-in" kinds of feedback each presents to the other in the spouse Rorschach. For example, with one couple we were able to predict correctly many details about their schizophrenic daughter's behavior from individual Rorschachs studied on a blind basis. Later, however, in assessing the spouse Rorschach and knowing that it came from this family, we felt we could have readily predicted that the index offspring would be schizophrenic, but that our prediction would have been much less detailed because the parents as a couple reduced themselves to the roles of the *confuser* and the *confused*. Much of what each had exhibited on the individual Rorschach in the way of specific individual deviances in expressing ideas and directing attention was not at all clearly apparent in the spouse Rorschach.

The point was made earlier that some parents appear in the spouse Rorschach and in conjoint interviews to have a corrective impact upon one another. An example from a normal family illustrates this point. When the husband in a research interview with the couple began to discuss, in an abstract way, the term "relationship" (which had been introduced by the interviewer), the wife let the husband ramble on in an obsessive, legalistic, and obscure way for a while. She then suggested quite simply and directly that they should talk about "how we get along together." She did not accept or join in her husband's vague abstract monologue, in which the three persons present were not going to be sharing much, but instead offered a topic for discussion that was shareable, that could lead to mutual exchanges of information, and that would facilitate the interview task. What each parent reinforces in the other, or fails to correct varies from family to family. For example, a parent may leave "disordered" remarks of the spouse hanging, without closure, in a spouse or family Rorschach by simply ignoring and by-passing what the other says. Hypothetically, children in such a family would be left with disordered comments seemingly having been given as much

weight as more understandable or completed remarks.

What each parent is like as an individual is important in terms of the patterns he or she offers, but it is our observation that a most important aspect of what children internalize is the *over-all* combined effect of family interaction or, in sociological terms, of the family as a small social system. Some quite different ideas about what is "identified with" or internalized need spelling out. How families "fit" together is under study. For example, two mothers may be found to show rather similar communication deviances as individuals when apart from their families. The psychological impact of these similar mothers if they were in different family constellations would vary considerably—depending on differences in their "fit" with the rest of the family social system. In some families, a father may augment or at least not counteract substantially the disturbing impact of the mother, even though he may, in other roles outside the family, or with other kinds of emotional support, manifest many positive attributes and personal assets. Hence, corrective potentialities evident under other, non-familial circumstances may not be operative and available within the family for internalization by the children.

In other families, the father may not share or collusively support the wife's disturbed functioning. If his stylistic differences from his wife do not lead to utterly chaotic family disorganization, and if he can have a steady, differentiated, recognizable role in the family, he may become an alternative, effective model for identification. Predictively his children will be conflicted, perhaps severely neurotic, but probably not with gross schizophrenic defects in ego functioning as we find in families where *both* parents' communication has attention and meaning deficiencies.

We have illustrated this point elsewhere (Singer & Wynne, 1965) with synoptic evaluations of four mothers who were all quite disturbed and disturbing; when the father seemed to provide a corrective, "counteracting" influence, the offspring turned out to be neurotic or borderline rather than frankly schizophrenic. Within

the present sample of parents, whenever one parent—either parent—was judged to have a definite "counteracting" influence over the adjudged pathological impact of the other, the offspring were never frankly schizophrenic, even though the other parent was sometimes quite severely disordered as an individual.

The consensus Rorschach offers a standardized way of directly studying interaction within families. It has, as a special advantage, that the individual starting points at which family members begin to communicate are similar for each family member and can be directly observed. Further, the consensus Rorschach is an interpretive transaction in which meanings are attributed to the "reality" of the Rorschach cards. Thus, it can be inferred that this may parallel those repeated times throughout a child's formative years wherein parents interpret, name, label, and instruct children about the world in which they share. Further studies will help elucidate the extent to which the styles of communicating and relating shown by families during testing parallel their behavior in other situations.

REFERENCES

- Behrens, M., Rosenthal, A., & Chodoff, P. Communication in lower-class families of schizophrenics: II. Observations and findings. *Archives of General Psychiatry*, 1968, in press.
- Loveland, N., Wynne, L., & Singer, M. The family Rorschach: A new method for studying family interaction. *Family process*, 1963, 2, 187-215.
- Loveland, N. The relation Rorschach: A technique for studying interaction. *Journal of Nervous and Mental Disease*, 1967, 145, 93-105.
- Morris, G. & Wynne, L. Schizophrenic offspring and parental styles of communication. *Psychiatry*, 1962, 28, 32-45.
- Rosenthal, A., Behrens, M., & Chodoff, P. Communication in lower-class families of schizophrenics: I. Methodological problems. *Archives of General Psychiatry*, 1968, in press.
- Singer, M. T. Family transactions and schizophrenia: I. Recent research findings. *Excerpta Medica*, 1967, (151).
- Singer, M. T. & Wynne, L. C. Differentiating characteristics of parents of childhood schizophrenics. *American Journal of Psychiatry*, 1963, 120, 234.

- Singer, M.T. & Wynne, L.C. Stylistic variables in family research. Paper presented at a symposium, Milwaukee Psychiatric Hospital and Marquette University, Wisconsin, Department of Psychiatry, 1964.
- Singer, M. & Wynne, L. Thought disorder and family relations of schizophrenics. IV. Results and implications. *Archives of General Psychiatry*, 1965, 12, 201-212.
- Singer, M. T. & Wynne, L. C. (1966): Communication styles in parents of normals, neurotics, and schizophrenics. *Psychiatric Research Report of the American Psychiatric Association*, 1966a, 30, 25.
- Singer, M. T. & Wynne, L. C. Principles for scoring communication defects and deviances in parents of schizophrenics: Rorschach and TAT scoring manuals. *Psychiatry*, 1966b, 29, 260.
- Singer, M. T. & Wynne, L. C. Rorschach and TAT differentiation of parents of schizophrenics, 1968.
- Wynne, L. C. & Singer, M. T. Schizophrenic impairments in sharing foci of attention: A conceptual basis for viewing schizophrenics and their families in research and therapy. Paper presented at the Bertram H. Roberts' Memorial Lecture, Yale University, New Haven, Connecticut, April 26, 1966.
- Wynne, L. & Singer, M. Thought disorder and family relations of schizophrenics. I. A research strategy. *Archives of General Psychiatry*, 1963, 9, 191-198.

Consensus Rorschachs And Related Procedures For Studying Interpersonal Patterns¹

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It should be noted at the outset that the term "consensus Rorschach" does not refer to a single, specified procedure, but to an array of procedures with a variety of goals and a diversity of evaluative techniques. One approach is that of Dr. Nathene Loveland (1963, Loveland, Wynne, & Singer, 1967) who has worked at the National Institute of Mental Health with a series of procedures which she has collectively labeled the "Relation Rorschach." In Dr. Loveland's approach, emphasis is given to the *manner* or *process* by which two or more persons assess consensus about the meaning of the Rorschach inkblots; the number and content of consensual agreements is of secondary importance. The primary data are the tape-recorded comments of the participants while conversing with one another. The tester is not present in the room and thus does not answer or ask questions after the standard instructions are given. Finally, a written inquiry is obtained in order to evaluate how fully the participants actually agree about the same responses after they verbally report that they have reached consensus. Because the material obtained is studied in verbatim detail and has proved to be exceedingly rich in quality, only one or two cards have been needed for each interpersonal combination studied. Thus, following the traditional individual Rorschach, it has been possible in rapid succession to administer a Family Rorschach, including parents and their offspring, a Spouse Rorschach, with the married couple alone together, and various subgroups of a family in dyads and triads. With young children, the parents are asked to explain the task to the child as well as to engage in a consensus effort with the child. The same procedure

can also be used with *ad hoc* groups, with family therapy groups, and with patient-therapist pairs. Dr. Loveland's scoring procedure emphasizes three aspects of the transaction: (a) the clarity and vividness of each speaker's communication, (b) his understanding and grasp of the meaning of the other person's communications, and (c) "the affective stand the participants take in relation to each other and to the task" (Loveland, 1967).

Quite a different use of a consensus Rorschach procedure was that of Blanchard (1959) who took a more purely clinical, less standardized approach in studying peer groups of delinquent boys. In Blanchard's cases there was an analogy between the ways in which these boys joined together and influenced one another in the consensus Rorschach procedure and in consensually agreed-upon gang-rapes.

Another approach is that of Cutter (1967) who has compared the Rorschach responses of persons who have complementary roles with another; he makes deductions about the quality of these role pairings by looking at polarities of content in the responses to the same inkblots by the various participants.

Still another emphasis is that by Bauman (1967) on the *product* produced by a consensus Rorschach procedure, as distinguished from the communication process through which this result was reached.

Thus, in this small sample of reports, and those of others, e.g., Levy and Epstein (1964), there is already apparent a great diversity of objectives, methods of administration, and methods for scoring consensus Rorschachs. From a broader viewpoint, the consensus Rorschach is, in fact, a group of procedures which have much in common with a considerable variety of other methods which have begun to appear in the last several years for studying families and other small groups. This trend reflects, as I see it, three kinds

¹ This paper is a modification of a presentation at a symposium at the American Psychological Association meeting, Washington, D. C., September 3, 1967.

of growing dissatisfactions and needs: (a) dissatisfaction with an exclusive preoccupation in individual personality functioning and psychopathology, along with a growing interest in larger social units which are still manageable and small enough to be amenable to study; (b) dissatisfaction with retrospective data and a greater reliance upon direct observations of behavior; and (c) a growing interest in standardized research procedures which are suitable for the evaluation and testing of clinically derived hypotheses and speculations.

With respect to the evaluation of particular cases, the consensus Rorschach does seem to contribute to a more comprehensive evaluation of the functioning of individuals than is possible if they are seen only alone with a tester or interviewer. Thus, it is of both clinical and research interest to study how an individual's functioning varies in a series of interpersonal situations. Cutter and Farberow (1968) have been specifically interested in this problem and have serially administered consensus Rorschachs to a 42-year-old alcoholic together with a series of other persons including his wife, friends, and roommates. Another clinical use of consensus Rorschachs is the evaluation of therapy groups. Nathene Loveland (1967) has been exploring the use of consensus Rorschachs not only in conventional group therapy (with the therapist, as well as the patients, joining together in making the consensus), but also with individual therapist-patient dyads, and families together with a family therapist. This approach seems promising in terms of evaluating change, longitudinally, over the course of psycho-therapy, and also in evaluating the extent to which a particular therapist "fits" appropriately with the persons being treated. Presumably, over-identification with the feelings or objectives of a patient or group may not augur well for therapeutic movement, yet some capacity for reciprocal empathy and exchange of ideas and feelings seems to be an essential ingredient in psychotherapeutic processes as ordinarily conceived. The consensus Rorschach provides an opportunity for evaluating treatment groups over time in terms of communication processes that

presumably are relevant to the psychotherapeutic process, but the communication process is seen in a setting which is outside of the treatment itself. Thus, some evaluation of the "carry-over" of treatment changes to a task other than the therapy itself becomes possible.

In addition to the clinical usefulness of such procedures, the consensus Rorschach and allied procedures are receiving much interest at present because of their potential usefulness in systematic, experimental, hypothesis-testing research. A great variety of specific problems have recently, or soon will be, studied with these approaches. A major problem of this kind is the investigation of the circumstances under which, and the ways in which, individual functioning is modified as part of a group process. Now being tried out by a number of investigators is the comparative study of consensus Rorschach versus individual Rorschach performance. Changes and constancies can be evaluated in terms of content and also such variables as form level, originality of responses, clarity and vividness with which the responses are described, etc. Levy and Epstein (1964) noted a "Leveling off" effect of family interaction in which "sick," impulse-determined responses given individually, as well as productive, imaginative elaborations, are suppressed or hardly mentioned during the Family Rorschach. Margaret Singer (1968) has noted that parents of schizophrenics tend to constrict each other's behavior so that salient features of their role-structured ways of communicating and relating stand out clearly in a consensus Rorschach of the spouse pair together. However, the individual Rorschachs of these parents seem to provide a more diverse, complex picture for prediction of detailed characteristics of the offspring. These observations suggest that the individual and consensus Rorschachs may both be useful for the research study of families and groups, but in somewhat different ways.

Although individual Rorschach protocols from family and group members apparently convey qualities different from those seen in the consensus Rorschach records from the same persons, it does

not necessarily follow that the effect of the group or family on the individual can be determined by comparing the individual and consensus Rorschach records mechanically or directly. Nathene Loveland (1967) has pointed out some of the various reasons which can make the comparison of responses in the two situations by the same individual a misleading procedure. In the individual Rorschach, the *S* and *E* do not reciprocally exchange ideas. The comments of the *E* are ordinarily predetermined as part of the procedure of administration used. In contrast, the *Ss* in the consensus Rorschach are explicitly expected to contribute reciprocally and conjointly in a dialogue in which *each S* not only reports his own ideas but needs to understand and evaluate the ideas of the others. Thus, the task *as well as* the interpersonal impact differs in the individual Rorschach procedure and in the consensus Rorschach. Also, in the consensus Rorschach, the participants are relatively unfamiliar with the task and the inkblots and need to explain more to one another what they are seeing and where they are seeing it in order to make this clearly understandable. For example, participants in the consensus Rorschach ordinarily need to turn their cards in order to show one another where they are seeing particular responses, whereas in the individual Rorschach, the card is ordinarily held by the *S* in such a position that the examiner can see it without this being a part of the task on the part of the *S*. In the consensus Rorschach, some *Ss* fail to specify where they are seeing a particular percept, and then fall into either confusion or pseudo-consensus in the subsequent discussion. The structure of the procedure and the task of the *Ss* in the traditional and consensus Rorschach differs in detail sufficiently so that this complicates interpretations of whether or not differences in responses are due to group effects as such or to the procedural differences which are in addition to the group effects.

It may be that a different kind of transactional task is better suited than is the consensus Rorschach-individual Rorschach comparison for evaluating the effects of group and family interaction on

individual members. For example, an experimental procedure tried out by David Reiss (1967) using a pattern recognition task with families of normals, character disorders, and schizophrenics seems to have some advantages in the degree of precision with which relevant variables can be controlled. Similarly, it seems likely to me that other special experimental procedures may be preferable to the consensus Rorschach procedure for isolating and testing the significance of other variables in complex interpersonal processes. Future research will need to be carried out comparing the performance of the same groups and families when taking part in a variety of transactional procedures - not only with the various consensus Rorschach procedures, TAT, Object Sorting Test, WAIS materials, etc., but also with such techniques as the Revealed Differences technique (Mishler & Waxler, 1966), the experimental procedures devised by Reiss (1967), cooperation-conflict games as used, for example, by Ravich, Deutsch, & Brown (1966), and Goodrich and Boomer's Color-Matching Test (1963). It is clear that no one procedure is equally suitable for all possible purposes, so that it behooves an investigator in this area to consider carefully which available procedure is most appropriate for the given problem to be studied.

Among the special advantages of the consensus Rorschach is that the inkblots are specific and identifiable, can be located in space, unlike purely verbal stimuli, and yet are relatively unstructured so that a diversity of interpretations ordinarily are made with little implication that one answer is "right" and another "wrong." Lively interchange about Rorschach responses can take place between persons of widely differing intelligence levels, without intelligence in itself becoming a decisive factor in the way the transaction unfolds. Also, most *Ss* become readily involved in a discussion of their responses and rarely become bored or disturbed by the task itself.

On the other hand, the simplicity and clinical freedom to which the consensus Rorschach lends itself raises the hazard of a lack of standardization in procedures for administering and evaluating the find-

ings with this technique. Especially with a procedure for which no comprehensive standardization has yet been carried out, it is important for each researcher using this technique to describe in considerable detail exactly how the consensus Rorschach in his study is being administered and scored. Some of the reports published so far leave considerable ambiguity about the methodology used. The following are some variations which do need to be specified for research use of the consensus Rorschach at the relatively straight forward stage of administering the procedure, prior to scoring. (Obviously, scoring cannot be comparable or meaningfully standardized unless the administration of the procedure has been specified clearly.) First, there appear to be a number of variations in how the consensus Rorschach and the individual Rorschach follow one another. If the same cards are used in both procedures, and if the time interval between the two is short, the effects of change in the interpersonal setting are mixed in with the effects of card repetition as such. Further work on the effects of different time intervals and of having the individual Rorschach follow rather than precede the consensus Rorschach will be desirable. With some scoring procedures, as in Loveland's approach, the content of the responses is of relatively minor importance so that the use of different cards, such as the Zulliger cards, has been suggested by Loveland (1967) as advantageous.

A second aspect of the methodology which needs standardization is the degree of participation by the tester. Loveland has minimized this to the extent of even having the instructions read on a tape recorder speaker, but others prefer to have the examiner be present and, in effect, contribute to the process of reaching consensus. Third, the number of cards given to each group constellation appears to vary from one to ten. Fourth, the number of responses expected varies from one to three to an unspecified number, with various time periods allowed before which prolonged discussion is cut off. Fifth, there also are variations in how consensus is recognized. In some procedures the tester judges whether the

family or group has reached consensus, and then asks them about this; other examiners give the responsibility explicitly to the family or group to signal when they have finished. Sixth, there are differences in how, and if, an inquiry is carried out. Loveland (1967) has found some fascinating differences between what people verbally *think* they have agreed upon and what they individually write down that they have agreed upon. Thus, although the consensus Rorschach sounds like a relatively straightforward procedure at first glance, it is apparent on further scrutiny that a wide diversity of ways for administering it, to say nothing about the diversity in scoring and interpretation, may affect greatly the effectiveness with which this method can be used in systematic research. Presumably there is general agreement that the interaction needs to be tape-recorded and studied verbatim. The necessity for observation directly or by video tape study of non-verbal participation may be of lesser importance, but it deserves further evaluation.

Turning to scoring problems, how, and the extent to which, responses are abstracted from the verbatim protocol will obviously affect the scoring procedure. It is possible to study the communication in consensus Rorschach transactions, very much as one might examine the flow of an interview, without necessarily delineating out formal Rorschach responses as such. However, in a communication analysis of this kind, communication units need to be specified. Loveland (1967) has made one suggestion for a unit analysis. Mishler and Waxler (1966) have studied extensively the problem of unit selection in the communication samples obtained with the Revealed Differences method. In any event, it is essential that the same units be scored or coded by each rater going over a protocol in order for reliability of scoring to be studied. I take it as axiomatic that reliability of scoring between raters, each working blind, is essential to systematic, comparative research in this area. To what extent all investigators wish to use the consensus Rorschach with such rigorous care is yet to be clarified. However, the procedure does lend itself to systematic hypotheses-testing types of

studies if these procedural details are carefully handled.

Summary

In summary, the consensus Rorschach provides a potentially relatively standardized situation in which behavior of two or more persons interacting with one another can be observed, recorded, and studied directly without relying upon retrospective reconstructions of behavior patterns. This procedure shares with other techniques the method of asking a group or family to work on a problem together—such as discussing differences in answers to individually administered questionnaires, playing games in which cooperative versus conflictual interests are pitted against one another, etc. In these various procedures, communication and behavior patterns can be compared systematically from group to group, from individual to individual, from role to role, and in relation to a variety of other variables which may impinge upon the procedure and its participants. These procedures open up a whole new area for both clinical interpretations and systematic research investigations. For the latter, a considerable number of methodologic issues still need to be studied and specified. A few of these problems have been outlined in this paper.

REFERENCES

- Bauman, G. Interaction product analysis in group and family assessment. Paper presented at the 75th American Psychological Association, Washington, D. C., September 1967.
- Blanchard, W. The group process in gang rape. *Journal of Social Psychology*, 1959, 49, 259-266.
- Cutter, F. Role complements and changes in consensus Rorschachs. Paper presented at the 75th American Psychological Association, Washington, D. C., September 1967.
- Cutter, F. & Farberow N. L. Serial administration of consensus Rorschachs to one patient. *Journal of Projective Techniques & Personality Assessment*, 1968, 32, 358-374.
- Goodrich, D. W. & Boomer, D. Experimental modes of marital conflict resolution. *Family process*, 1963, 2, 15-24.
- Levy, J. & Epstein, N. An application of the Rorschach test in family investigation. *Family process*, 1964, 3, 344-376.
- Loveland, N., Wynne, L., & Singer, M. The family Rorschach: A method for studying family interaction. *Family process*, 1963, 2, 187-215.
- Loveland, N. The relation Rorschach: A technique for studying interaction. *Journal of Nervous Disease*, 1967, 145, 93-105.
- Mishler, E. & Waxler, N. Family interaction and schizophrenia: An approach to the experimental study of family interaction and schizophrenia. *Archives of General Psychiatry*, 1966, 15, 64-74.
- Ravich, R., Deutsch, M., & Brown, B. An experimental study of marital discord and decision-making. In I. Cohen (Ed.), *Family structure, dynamics and therapy*. Psychiatric research report No. 20, Washington, D. C.: American Psychiatric Association, 1966, 91-94.
- Reiss, D. Individual thinking and family interaction-II: A study of pattern recognition and hypothesis testing in families of normals, character disorders and schizophrenics. *Journal of Psychiatric Research*, 1967, 5, 193-211.
- Singer, M. The consensus Rorschach and family transactions. *Journal of Projective Techniques*, 1968, 32, 348-351.

Discussion: The Resurrection of the Rorschach as Consensus

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In a recent review of Rorschach research over the past decade (Klopfer, 1968), the present writer concluded that the old conception of the Rorschach as a magic x-ray of the personality had been pretty much discredited by the work of various authors who have demonstrated the effects of transient and situational variables on Rorschach performance. This was made particularly clear in a review by Masling (1960). However, there has been a resurgence of interest in the test in recent years centering around the discovery of new approaches such as the Consensus Rorschach. With the increasing interest in predicting *interpersonal* behavior, the use of a series of ambiguous stimuli like the Rorschach inkblots to test interaction in a standardized situation with which the subjects have had no previous experience is exciting. There is suggested a brand new way of resurrecting this valuable projective test for a purpose that fits in with current mores in clinical psychology. The papers by Blanchard and Bauman & Roman in the present symposium, as well as the study by Kimmitt, Reed, and Klopfer (1966) show that decision-making behavior can be predicted in many situations on the basis of interactional reactions to unstructured stimuli like the Rorschach blots. The review by this author (Klopfer, 1968) emphasized the emerging importance of content as a major focus in research and practice, having predictive efficiency beyond the formal scoring categories.

The paper by Cutter demonstrates that content polarities can be tested and their ideographic significance emphasized by the consensus method. The fact that the interaction is complex and consists of

variance contributed both by the participants and the examiner, is demonstrated in the paper by Blanchard. Taking the contributions of Cutter and Singer together, it is evident that an interaction method like the Consensus Rorschach can either restrict or enhance the individual contributions, depending on the actual relationship of the persons participating in the method. Generally, it appears that people who have constructive interaction can produce an enriched protocol; those who tend to have aversive interactions in other situations demonstrate this in the present test situation. A tremendous capacity of the method for developing theory is also illustrated in the paper by Singer in regards to schizophrenia. It is indeed heartening to see that empirical data can result in actual theory-building instead of post hoc rationalization.

In conclusion, it is the impression of this writer that the Consensus Rorschach is the best example of the modern approach to projective testing in which materials with known stimulus qualities which have been subjected to considerable research can be used in a flexible and innovative way to predict relationships between couples, between members of families, and to test and build personality theory.

REFERENCES

- Kimmitt, Y., Reed, M. R., & Klopfer, W. G. The decision-making process as it relates to dominance in children. *Journal of School Psychology*. 1966. 4, 1, 37-44.
- Klopfer, W. G. In McReynolds, et al., *Advances In Psychological Assessment* Vol. 1. Palo Alto: Science & Behavior Books, 1968.
- Masling, J. The effect of situational and interpersonal variables in projective testing. *Psychological Bulletin*, 1960, 57, 65-86.

Serial Administration of Consensus Rorschachs to One Patient

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Summary: The serial administration of individual and consensus Rorschachs to a subject with his friends, with his roommates, with his wife, with a high-low status pair, by himself, his wife alone six months later, reflect differences attributable to these differing social contexts. The changes can be conceptualized as adaptations to variations in the particular group's conflicting expectations as manifested in terms of content polarities. A smaller quality persists which we can call character or uniqueness. The process of mutual influence and accommodation can be studied by the identified patient's Rorschach responses to the group's consensus Rorschach agreements and disagreements.

The simultaneous administration of the Rorschach test to two or more people with the explicit instruction to achieve consensus has been reported recently (Blanchard, 1959; Loveland, Wynne & Singer, 1963; Loveland 1967; Bauman & Roman, 1964; Roman & Bauman, 1966; Levy & Epstein, 1964; Farberow, 1967). Methods of analysis are in the incipient stages and will be reviewed shortly.

Traditionally, the Rorschach protocol was obtained in a dyadic situation, i.e., patient and examiner. Interpretation of behavior in the testing context was extrapolated to the family, significant others, authority figures, school, etc. The protocols obtained in a consensus administration represent a radical departure from the preceding. Behavior manifested in a consensus protocol is more like the behavior to be found in the social situation represented by the group participating; since they share the quality of existential encounter.

While this type of approach yields a significantly new dimension of observation, the choice of participants in the consensus Rorschach raises many questions. Will the reactions of a designated *S* vary with the different groups possible? Which groups are most relevant in eliciting behavior for study? If the *S*'s reactions vary from group to group, what is the unique quality that persists which we call character or the self?

This study is an effort to examine the effects of differing social contexts on the ensuing protocols. It is also an attempt to derive some heuristic values in contrasting the existent methods of analysis.

Review of the Literature

The Rorschach of Consensus was first reported by W. H. Blanchard (1959). He elicited individual Rorschachs of gang members for comparison with a total gang protocol called the "group process" Rorschach. Blanchard reports clinical and Rorschach impressions of three gang members in a white group and four gang members in a Negro group. Both gangs had participated in a rape.

In the white group, the gang leader quickly demonstrated his dominance by getting the other two members to accept his definitions of three out of the four inkblots given. On Card X, one of the members identified the central blue area as a "brassiere", which the others rejected vehemently.

In the Negro group, four boys participated in the Group Process Rorschach, with a clearly manifested struggle between the leader and a relatively "nice" member of the group. The struggle appeared to be in terms of dominating the others to accept "male homosexuals" on Card III by the leader, versus "two ladies" by the nice boy.

Blanchard used this material to document a rationale for homosexual impulses in leaders of gangs, triggered by the presence of gang members. At the very least, his publication supports an hypothesis that data reflecting group processes are far more relevant and useful than the col-

¹ The authors are indebted to Joel Cantor, Ph. D., Veterans Administration Center, Los Angeles, California, for providing all the subjects tested in the serial portion of this study.

lection of individual responses in classic testing modes.

Of empirical interest in his publication was the description of the interaction between the leader and a member for dominance of the consensus. In the present context, we construe this rivalry as reflecting an area of group conflict, shared by all the members, but expressed only by the two persons verbalizing the opposite polarities (Cutter, Farberow & Sapin, 1967).

Thus, in the white gang the sexual symbolism of "blue brassiere" and consequently, the arbitrary or willful implication for expression of affect, is externalized by the straightforward description and denial. It is as if the truth must out, even by a subordinate member, in the face of a dominant and reality oriented leader. In the second gang, the competition can also be construed similarly, with the group sharing the conflict. However, in the Negro group, the roles are reversed with the leader asserting Card III as male homosexuals, and a subordinate urging the socially more acceptable two ladies.

In the context of a California youth authority reception center, the dominant preoccupation and conflict in any inmate group is to reveal or not to reveal, damaging information. In two groups incarcerated for rape, it would appear parsimonious to infer that sexual responses of any sort would be perceived as damaging by the youths and yet of sufficient validity to demand expression.

Bauman and Roman have described their approach under the rubric of "Interaction testing" in 1964 and 1966. In their procedures they also gave the standard individual administration followed by an interaction session. They used couples in which one member was receiving psychiatric care in a Day Treatment Center. The couple had to agree upon a mutually acceptable response and also to select one member as recorder. The authors do not report direct results with the Rorschach in their initial publications. Instead they describe their system using the Wechsler-Bellevue similarities and comprehension subtest items from both Form I and II. Since their method has implications for Consensus Rorschach it will be described

here. The authors have indicated they are collecting Consensus Rorschachs and using this system for analysis. Essentially they rated each agreement response as dominance, combination, emergence or reinforcement, by contrasting individual and interaction testing. They also scored the quality of interaction responses in comparison to individual answers.

While the partner with the highest IQ tended to dominate agreement, the effects of sex, patient-status and role of recorder, were also significantly related to dominance. The authors noted a trend towards pooling of resources so that task efficiency of "normal" couples is not only consistent but differentiates them from couples with a neurotic member and also from couples with a psychotic member.

The authors conclude that decision-making processes studied by them are significant in discriminating normal from pathological, and hospitalized from discharged patient groups. They also note that negative emergence scores are the most discriminating in terms of identifying pathological marital-interaction.

Loveland, Wynn, and Singer, reported their preliminary experiences under the title of "Family Rorschachs," (1963). Their administration procedures elicited an individual and consensus protocol in much the same fashion as the other researchers with the exception that each member of the family had his own set of inkblots, and the examiner left the room. The authors describe their experience with a family of three in which the 25-year old son is a schizophrenic patient. All are in family therapy at NIMH. The consensus Rorschach elicited evidence of mother's disruptive and impairing effect with respect to father's and son's effort to communicate with each other and her. They see its value as a standardized sampling procedure for studying how family members interpret reality to each other.

Later, Loveland (in press), extended this approach under the name of "Relation Rorschach." She reports collecting verbatim recordings of interactions for approximately 150 groups of two or more members. These included patients and their therapists, spouses only, families

and family subgroups, including preschoolers. With increasing experience, she reports "stable inferences" from card to card, and recommends the use of one card only to elicit a ten minute transcription of interaction in arriving at consensus. An additional five minutes is permitted for families having difficulty.

Loveland asks each participant to indicate all the things that were agreed upon in a written individual inquiry following the "Relation Rorschach." This protocol yields three kinds of information: (1) each person's grasp of the consensus; (2) the clarity of the written over the verbal exposition; (3) those consensuses where the individual had unspoken reservations.

Interestingly, Loveland offers a rationale for the use of the Rorschach rather than tasks, examples from life, or other projective and objective tests: (1) the Rorschach test is engrossing without being traumatic for the participants and even with repetition; (2) the ambiguity of the stimuli permit projection, not only of the individual, but of the sub-culture of the group being tested; (3) the extensive experience of Rorschach psychologists and the background knowledge of the Rorschach inkblots permits the investigator to make use of relatively known materials to study human relations.

Loveland's system for analysis attempts to assess three qualities of interaction: (1) Clarity and vividness of speaker's verbal communication; (2) the grasp of meaning and the imagination, sensitivity, appropriateness and accuracy of understanding of the assignment, each other, and the inkblot interpretation; (3) relations — the affective stand the participants take to each other, the task, and the inkblots.

Each aspect is rated on a four-point scale:

1. Unusually sensitive, imaginative, realistic interaction which facilitates group movement in the direction of the task;
2. More ordinary objective transactions which are adequate in the situation;
3. Transactions which tend to constrict, hamper, distract, or otherwise limit consensus;
4. Transactions which preclude, distort, or disrupt consensus.

Loveland reports a pilot study of reliability using twelve spouse protocols

with two other judges as significant "at .03". The judges had graduate training in psychology and had been trained in making these ratings. The total ratings tended to differentiate parents by severity of psychiatric diagnosis carried for their offsprings, i.e., schizophrenic from neurotic, neurotic from medical, and volunteer.

Levy and Epstein (1964), report their use of Consensus Rorschachs with a family preceded by individual testing. They construe the Rorschach protocols thus obtained as throwing light on how the family achieves equilibrium. Levy and Epstein conceptualize this continuous process as consisting of efforts by members to: (a) "level off" his individual response from a highly personal and expressive percept (either good quality or poor) to one that is more compatible with the emerging consensus in the family context; the quality of the consensus response may be better than the individual's or worse; the comparison permits an inference about the price the individual pays for his participation in achieving consensus; (b) "maladaptive functioning" on the individual Rorschachs by both parent and one child producing psychopathological areas on the consensus. The individual's typical mode of achieving equilibrium fails in the group protocol and consensus fails to emerge or emerges in poor quality.

Singer and Wynne (1963), have described the stylistic consistencies of family members which impair communication. The critical aspect they have emphasized is the style of communicating in which the pattern of handling attention and meaning was most predictive. Singer was able to match Rorschach protocols of patients to those of family members to which the patient belonged. They report a detailed guide for differentiating the families of schizophrenics from those of non-schizophrenics in terms of how they handle attention and meaning.

Cutter, Farberow, & Sapin (1967), have called attention to the value of construing the unique response of symbiotic partners as polarities of dimensions that define shared expectations for both conflict and consensus.

We have, then, the following possi-

bilities for ordering the behavior apparent in consensus Rorschachs based upon reported experiences in the literature:

1. Decision-making process; dominance, combination, emergence, reinforcement.
2. Family equilibrium; leveling (plus or minus) and psychopathological areas.
3. Areas of polarity that define relevant dimensions for shared expectation and conflict.
4. The stylistic consistencies of individuals in a family.
5. The four-point rating of clarity, meaning, and relation proposed by Loveland.

Procedure

A 42-year old male, VA patient, retired after twenty years of naval service, high school equivalency by GED tests and hospitalized for alcoholism in an intensive rehabilitation program at the Veterans Administration Center, Los Angeles, was the *S* used in this study. He is married to a Japanese woman he met while on duty in Japan. She is his second wife, the first was divorced after a two-year marriage. Neither wife was fertile at the time of his marriage to them. At the time of testing he had completed approximately 30 days in a 60-day rehabilitation program.

The Rorschach test was administered at the following times and conditions with transcriptions prepared for all tape recorded verbalizations.

The first type of analysis possible is to score the resultant protocols,² regardless of how obtained, to yield the usual

indices of Rorschach behavior. We did this for all the obtained protocols, but only for those categories that could be obtained in all administrations. Thus, for example, reaction times are omitted.

The second type of analysis we attempted was a straightforward count of the number of interactions and words uttered by the participants in each consensus administration. The total per card was divided by the number of people participating in order to establish an expected level of effort. The difference between the expected and the actual number by our principal subject provides a measure of the effort he expends on any one card and in any consensus context. By summing all the differences by groups, we can find the algebraic measure of effort expended in each administration.

The third procedure was to analyze the protocols of one inkblot by the five modes described in the literature for each social context, and hopefully derive some form of composite methodology.

The fourth procedure was an effort to assess the degree of communality between the consensus protocols of the five different group administrations and the *S*'s first individual Rorschach protocol.

The fifth type of analysis was to elicit the semantic differential for each inkblot by the *S* and his wife during their second individual administration on the same day. The husband's semantic differentiation

<i>Date</i>	<i>No.</i>	<i>Type of Rorschach</i>	<i>Other Subjects</i>
8-16-66	1	Individual	None
8-17-66	2	Consensus	Three friends
8-22-66	3	Consensus	Three roommates
8-24-66	4	Consensus	Wife
8-26-66	5	Consensus	One high, one low status Individual
8-26-66	6	Individual	None
3-30-67	7	Individual and Semantic Differential	None
3-30-67	8	Consensus	Wife
4-20-67	9	Individual and Semantic Differential	Group administration with slides and group administration of Semantic Differential

² Copies of the transcripts of all the Rorschach protocols will be published separately.

of ten concepts was also obtained as a reference. Finally, the husband's rating by semantic differential of all the inkblots was obtained by a group administration three weeks later. These data permitted the following comparisons:

1. The *S*'s differentiation of the ten inkblots on two occasions separated by three weeks,
2. The *S*'s differentiation with his wife's for the ten inkblots on the same day,
3. On the basis of comparison number two, the inkblot which the couple rates most alike can be compared to the *S*'s rating of the ten concepts to establish its meaning in his perceptions and also wife's.

The sixth procedure was to compare the protocols of our alcoholic *S* with another couple that can be considered normal with respect to alcoholism, suicide, delinquency, recognizable psychopathology, etc. We used a patient and his wife known to us from another study and identified here as control, who will be described more fully under "Results."

Results

Procedure I

Table 1 summarizes the consensus and topics of disagreement in the various protocols. Table 2 tabulates the sums, balances and percentages of the usual Rorschach scores for all administrations:

The 13 items compared over the nine administrations for our *S*, plus the wife's appear to be comparable when scored as though obtained from the same individual.

Procedure II

Table 3 shows the distribution of the index of effort expended for all consensus administrations. This index was computed by finding the difference between our *S* and the total group's average, summing algebraically for all 10 cards, for reaction and words used.

The trend is consistent with both indices. Our *S* increased his effort to a maximum with his wife, from a minimum with his friends.

Procedure III

Following Loveland's suggestion we used Card IV only as a basis for comparing the five procedures reported in the literature.

Singer's system didn't appear relevant

to our patient, who was a non-psychotic alcoholic. On two of her attentional items he received ratings of more than one (pathological direction). The major significant point we infer from this analysis is that his handling of attention deteriorated slightly in relation to his wife. On the other hand, Loveland's system was somewhat more useful in detecting degrees of impairment in our *S*'s capacity to grasp meaning and the kind of affective stand he takes in relation to others. However, here too, the only conclusion we can derive is that these areas are more impaired in relation to his wife.

The Levy-Epstein system yields a similar conclusion and appears to be subsumed by the more detailed method presented by Bauman and Roman, (1964). No matter who dominates the consensus, its quality is minus or absent. The failure here is relative to the high original *M+* response during the individual administration.

We decided to score the total protocol from each administration by the Bauman and Roman system. This yielded the results of Table 4. The number of consensuses dominated by our *S* increased as his effort increased. Their quality was also associated with increased effort.

The content-Polarities method applied to Card IV yields the information summarized on Table 5. The identification of the two poles was made by the writers in rereading the protocols of each consensus. The two items that produced the most controversy were taken as the poles. The categorization of each into a self or other expectation is based on the contextual and overall protocols. Thus, "head of a flying dragon" appears similar enough to the "man riding on a motorcycle" to warrant labeling the former as self-expected:

Using the poles listed the writers inferred a dimension for each pair and by taking the *S*'s self-expectations, we constructed the following role profile for the social contexts sampled:

- a. with friends he expects to be irresponsible.
- b. with roommates he expects to maintain affective distance.
- c. with his wife he expects to be a victim.
- d. with a high-low status group he expects to be lower.

Table 1
Abstract of Serially Administered Consensus Rorschachs to an Alcoholic Patient and Five Groups to Which He Belongs

Cards - 8-16-66 Individual	8-7-66 Friends	8-22-66 Roommates	8-24-66 Wife	8-26-66 Status	8-26-66 Individual	Wife 3-30-67 (6 months later)
I Wild bat.	(Bat) Deteriorated bat/ Devil's mask.	(Bat) A. Bird, what's/P-38 left of one. B. Animal/Fossil.	(Bat) Animal/Crab.	(Bat) Clean/Came off a dirty place.	Bat.	(No Consensus) Flying mammal/ Spider head.
II Tigers and Shadow	(Sheep) 2 Ovaries, vagina/sheep fighting, blood off their paws.	(Pelvis) A. Shadow/reflection B. 2 dogs, bloodhounds/ Skin cut in half. C. Bad kidneys/skeleton D. 2 Bears/2 birds	(Wooley Bear) Puppy/mouse.	(Butterfly) Furry/wounded.	2 Animals, fancy, dog or bear wounded.	(Bear) Teddy bear/bear in funny papers.
III Two people conversing	(2 Women) A. Women/men (working)/(tug of war). B. Backbone/hearts. C. TV monsters/2 dancers.	(2 Women) A. Vase/bow tie. B. 2 women/2 guys (working)/(trying) C. Wash bench/beating drum (laundry)/(slaughter).	(2 Women working) Shoes/breast.	(2 Women working) A. Crab/human. B. Cremated/boil- ing	Two women working	(2 Women) Working/dancing
IV Man riding a motorcycle sure got big feet.	(Cow Hide) Flying dragon/X-Ray of spine.	(A Hide) Cross section of a flower/ antenna, face of a grass- hopper.	(Lobster) Snail, squashed, sick/hide.	(Hide) Bug/snail.	Hide of bear.	(No Consensus) Lobster/snail
V Butterfly in flight.	(Butterfly and ladies) No content-polarity.	(Butterfly) No content-polarity.	(Butterfly) No content- polarity.	(Butterfly) Bat/flying mammal.	Bat flying.	(Bird) No content- polarity.
VI Buffalo skin/ stretched out.	(Microscopic sewage water) Cheeks of an ass/mouth of a grasshopper, open.	(Indian totem pole, etc.) A. Hide/in ground, going down. B. Insect going through a bubble, drill sting going in/brush and water coming out.	(Skin) A. Butterfly/ bird. B. Dolls/dragon fly	(Missile) No content- polarity.	Indian design on top of hide.	(Hide) No content- polarity.

(Continued on next page)

Table 1 continued

Cards - 8-16-66 Individual	8-7-66 Friends	8-22-66 Roommates	8-24-66 Wife	8-26-66 Status	8-26-66 Individual	Wife 3-30-67 (6 months later)
VII Inlet you would see on a map.	(Poodle) A. Lock/Hasp, Post. B. Penis/Vagina. C. Cracker. (animal/Poodles on head).	(Wig) A. Hairline/wig B. G. Washington/Little Iodine. C. Cloud/Smoke. D. Harbor/Lake. E. Dogs/Rabbits. F. French Poodles/ Scotch terrier.	(Scotty Dogs) Puppy dog/ Harbor.	(Vaginas) A. Scotty/French Poodle. B. Standard/ larger size. C. Dogs/harbor.	Inlet or harbor map.	(Puppy Dogs) Island map/ 2 puppy dogs.
VIII Opposum, crossing the creek and this would be his re- flection.	(Animal and Sex Symbol) Cat/mangy rat (Evil) (Cute) (Up X-mas tree)/ (In pit). (Climbing tree)/ (Crossing river).	(Animal) A. Egyptian Cleopatra boat/flowers in Japanese garden B. Emblem/coat of arms. C. Girl's mask/skull bone.	(Animal) A. Land/water. B. Wild/Walt Disney.	(Animal Walking) Wolverine/buffalo. (Crawling)/(Walk- ing).	Varmint cross- ing a stream.	(Animals) Crossing stream/in water.
IX Man in a pool of water and he's pushing an object out of the water.	(Wooded Area and Violin) A. Old witch/Fu Manchu mustach (Faces)/(masks). (Blowing on a pipe)/(Violin). B. Sand or desert/ Wooded area with a stream.	(Flower) A. Alligator/dragon. B. Guy/woman. C. Cross section of flower/Chinese design	(Man at Work) No content- polarity	(Man Working) A. Animal/bug. B. Reflection/ Cloud Form. C. Blooming flower/ explosion	Little man working.	(Baby) Little man/ baby.
X Sea view under water like an aquarium.	(Blue Brassiere) Inlets/water life.	(Goat) A. Tower/Napkin, oriental. B. Nanny goat/Mary's lamb. C. Moon people/Sea life. D. Goat peeking/billy goat	(Aquarium) Fish/crabs	(Marine Life) Native/Foreign	Sea life	(Aquarium) Sea life/bug eating

Table 2
Rorschach Scores Treating All Administrations As Though Derived From One Person

Item	Subject					Control							
	Ind.	Friend	Dorm.	Wife	Status	Ind.	Ind.	Wife	Both	Group	Mr.	Mrs.	Both
<i>R</i>	10	15	10	10	10	10	10	10	10	11	10	11	10
<i>F/R</i>	0/10	3/15	2/10	2/10	2/10	3/10	2/10	6/10	3/10	4/11	0/10	4/11	1/10
<i>Fk+F+Fc)R</i>	1/10	4/15	4/10	4/10	3/10	5/10	3/10	6/10	5/10	6/11	3/10	5/11	4/10
<i>(A+Ad)/R</i>	5/10	5/15	4/10	7/10	5/10	5/10	6/10	8/10	7/10	6/11	3/10	5/11	3/10
<i>P</i>	5	6	5	7	6	7	5	3	5	6	6	3	6
<i>O</i>	1	1	2	0	1	0	0	0	0	0	0	0	0
<i>(H+A) : (Hd+Ad)</i>	8:0	9:0	5:0	9:0	7:0	7:0	8:0	9:0	9:0	8:0	5:0	6:1	5:0
Sum <i>C</i>	0	0.5	0	0	0	0	0	0	0	0	1	2.5	1.5
<i>M:Sum C</i>	3:0	4:5	1:0	2:0	2:0	2:0	2:0	1:0	1:0	2:0	2:1	1:2.5	2:1.5
<i>(FM+M:(Fc+c+C)</i>	4:2	3:2	3:3	4:2	4:2	2:2	4:1	2:0	4:2	2:2	1:4	2:1	1:4
Last Three <i>R/R</i>	3/10	5:15	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/11	3/10	4/11	3/10
<i>W:M</i>	10:3	13/4	10:1	10:2	9:2	10/2	10/2	7/1	9:1	11:2	10:2	9:1	10:2
<i>W:D</i>	10:0	13/2	10:0	10:0	9:1	10/0	10/0	7/3	9:1	11:0	10:0	9:1	10:0

Table 3

Indices of Effort Expended Based on Number of Reactions and Words

$$\text{Index} = \frac{C}{1} \text{ Sum of } (S - T/N) \text{ where;}$$

S is subject's total reactions or words used per card

T is group's total reaction or words used per card

N is number of people participating

C is number of Rorschach cards

Index

	Friends	Roomates	Status	Wife	Wife (six months)
1. Reactions	- 33.00	- 14.25	+5.33	+5.50	+6.50
2. Words	- 226	+33	+139	+206	+235.5

Table 5 also compares the discrepancies between the *S*'s expectation for self and those expressed by the respective groups.

Procedure IV

In an effort to establish the degree of communality between the consensus protocols and the individual Rorschach of our *S*, we counted the incidence of common elements between the individual protocols and the consensus protocols. The results are shown in Tables 6 and 7 for the consensus and content-polarities respectively. On the second consensus protocols with the wife we compared the degree of communality with the *S*'s first individual Rorschach. (See Table 7).

The common elements between the first individual Rorschach and the various consensus achieved by the five different group administrations reach the highest percentage with his wife; a result that appears consistent with the intimacy of this relation.

The number of common elements between the subject's individual Rorschach and the content-polarities of the five group administrations is also consistent with the intimacy of the relations. The largest number of non-common elements (A), occurs with the high-low status pair and reflects the least intimacy as a group. This also supports an interpretation of alternative A as reflecting a resolution of

the conflict implied by the content-polarities of the group. Intimate membership would require a greater involvement in the conflicts of the group.

Procedure V

Table 8 reports the obtained distance indices for the semantic differentiation of the 10 inkblots on two occasions. This table also shows the same data for the *S* versus his wife. The data from both distributions permitted a rank order correlation coefficient which is shown together with the S.E. It is clear that the husband's median distance index from himself was smaller than from his wife. However, the association of the two distributions is significant at the 5% level of confidence indicating a fairly close similarity to their ratings of each inkblot.

Table 9 summarizes the obtained distances for the semantic differentiation by the *S* of ten concepts and those of himself on Card IV, and also those of his wife on Card IV. Their median distances are quite close and the correlation coefficient is highly significant. Thus we can conclude that their ratings of Card IV are not only similar to each other but appear to have equivalent meaning to them.

Procedure VI

A consensus Rorschach was administered to a couple known to us in connection with a study of patients being dialysed for kidney failure. The patient and

Table 4
Consensus Protocols Scored by Bauman & Roman's Method

Card	Friends	Roommates	Status	Wife #1	Wife #2	Control
I	R	D _H	R	D _H	N/C	D _H
II	D _{-O}	D _{-O}	D ⁺ _O	D _W	D _W	R ⁺
III	R	R	D ⁺ _H	D _H	D _H	R
IV	D _{-O}	D _{-H}	D _{-H}	D _{-W}	N/C	D _H /D _W
V	R _{E+}	R	D _H	R	E ₋	R ⁺
VI	D _{-O} D _{-O}	D ⁺ _H	D ⁺ _O	D _{-H}	D _H	R
VII	D ⁺ _O D ⁺ _H D ⁺ _H	D ⁺ _O	D _{-O}	D _{-W}	D ⁺ _W	D _H
VIII	D _H D _{-O}	D _H	D _H	R	R	R
IX	D _{-O}	D _{-O}	D _H	D _H	E ⁺	D _H
X	D _{-O}	D _{-O}	D _O	D _H	D _H	D ⁺ _W

Table 4 - Continued
Consensus Protocols Scored by Bauman & Roman's Method

Card	Friends	Roommates	Status	Wife #1	Wife #2	Control
D _H	3	4	5	5	3	4
D _O	9	4	4	3	2	2
R	3	2	1	2	1	5
Minus	1	0	0	0	2	0
Reaction Index (Total)	-31.00	-14.25	+5.50	+5.53	6.50	
Word Index (Total)	-226	+33	+139	206	233.5	

D: Dominance
C: Combination
D_H Husband

D_O Other

E: Emergence +
R: Reinforcement -
D_W Wife O

Quality of consensus when
compared to individual
protocols

Table 5
Content Polarities Defining the Self and Other Expectations for the Subject, Derived from Consensus
Protocols to Card IV

Source of Protocols	Consensus	Self	Other	Implied Dimension	Discrepancy in Expectations for:	
					<i>Self</i>	<i>Group</i>
Self	Man riding a motorcycle					
Friends	Cow hide	Head of a flying dragon	X-ray of spine	(Sick-Evil) Responsibility	Irresponsible	Responsible
Roommates	Hide (stretched on side of a building	Cross-section of a flower	Antennas hooking on face of grass- hopper	Affective distance	Intellectual	Displaying affect
Wife (first)	Lobster	Snail, squashed, hiding under leaf	Hide	Response to danger	Victim	Aggressive
Status	Spread-eagled hide	Snail	Bug	Slow-Fast	Dull	Bright
Wife (Second)	None	Snail	Lobster	Response to danger	Victim	Aggressor
Self Control Subject	Hide of large animal-bear Wolverine skin	Torn up, chewed up hind legs thin skin	Except for front legs fat	Degree of conventional adequacy	Doubts self inadequate	No doubt adequate
Control Wife		Color of clouds	Roll of rain clouds	Expectation of future trouble	Cautious	Expects

his wife were given the Rorschach individually preceding the consensus protocols. They also evaluated all the inkblots by means of the semantic differential. This couple was childless, married four years and in their twenties. Table 2 contains their consensus protocol scores for comparison with the 10 scores for the first couple. A Rho correlation between the obtained distances for both couples' semantic differentiation of all 10 inkblots did not depart significantly from chance (see Table 8.)

It just so happened that our control couples' semantic differentiation of Card IV also produced the smallest distance index. Thus we felt it appropriate to compare their consensus and individual protocols with our experimental *S*. The control *S* and his wife had been selected for positive qualities including capacity to co-operate with arduous medical procedures. Psychiatric disorders would have been identified and brought out by the resultant stress of treatment and psychiatric

observation available to this medical unit.

Clinically, the control couple arrived at consensus quickly, in contrast to our experimental *S*. Typically, she deferred to his preferences. We scored the consensus protocols by the Bauman-Roman method and show the results in Table 4 under control. The outstanding differences are the larger number of reinforcement responses and the absence of minus changes in the consensus compared to the husband's individual responses.

Procedure VII

Before we began our comparison we knew that the *S* was an alcoholic with periodic binges that disrupted home and work. We knew his Japanese wife's shy, passive demeanor, masked negative feelings toward men and her husband in particular. We could observe that her softly mumbled pigeon English presented communication problems to anyone, but especially to her partially deaf husband. What light did the series of Rorschach protocols throw on the function of "alco-

Table 6

Degree of Communality in Consensus Content With Individual Rorschach Responses

Card	Friends	Roommates	Wife	Status	Wife (6 months later)
I	P	P	P	P	N/C ^a
II			P		P
III	P	P	P	P	P
IV	P	P		P	N/C ^a
V	P/	P	P	P	E
VI	V	E	P	E	P
VII	P		P		
VIII	P/	P	P	P	P
IX	/E		E	E	
X			E	E	E
Total cons.	13	10	10	10	8
Less Popular	6	5	7	5	4
Less Vague	1	0	0	0	0
Remainder	6	5	3	5	4
E ^b Responses	1	1	2	3	2
Proportion	1/6	1/5	2/3	3/5	2/4

Note: (a) NC = No consensus achieved in family protocols.

(b) E = Element in standard Rorschach in common with consensus.

Blanks = Indicated individual responses that do not reflect consensus.

P = Popular V = Vague

Table 7
Degree of Commuality in Content-Polarities of Consensus Protocols
With Standard Rorschach Responses

Card	Friends	Roommates	Wife	Status	Wife (6 months later)
I	B	BA	A	A	B
II	B	BAAA	A	A	A
III	CAC	ACA	C	BA	C
IV	B	A	A	A	B
V				C	
VI	A	BA	AA		
VII	BBA	AAACAA	B	AAB	B
VIII	B	AAA	CC	C	B
IX	BB	ABA		ABA	B
X	B	AABA	C	A	B
Total	14	28	10	14	8
A	3	2	5	9	1
B	9	5	1	3	6
C	2	2	4	2	1
B+C	11	7	5	5	7

Note: A = Individual response to content polarity of group is unrelated.
 B = A distinct preference for one pole is apparent.
 C = Both poles present in individual response.
 B+C Common elements between individual and group protocols.
 Blanks = Absence of content polarities in group consensus.

Table 8
Distance Index Between Subject and Himself or Wife for the Semantic
Differentiation of All Ten Inkblots

Card	D Self Vs. Self	Rank	D Self Vs. Wife	Rank	D Husband Vs. Wife	Rank
I	4.47	4	7.28	2	11.67	10
II	6.64	9	9.85	9	4.47	1.5
III	3.20	1	8.25	5.5	9.16	7
IV	4.00	2.5	3.74	1	4.47	1.5
V	4.00	2.5	7.42	3	8.48	6
VI	5.83	6	8.83	7	4.69	3
VII	5.92	7	9.85	8	8.43	5
VIII	6.71	10	8.06	4	6.40	4
IX	6.25	8	9.90	10	9.85	8
X	5.20	5	8.25	5.5	11.31	9

Median 5.53 Median: 8.25

Rho: .582

SE: .229

Rho: -.072

Control vs. Experi-
mental Couples

Table 9
Distance Index Between Subject's Semantic Differentiation of Ten Concepts
and His Card IV Versus Wife's Card IV

Concept (Mr.)	Mr. IV D	Rank	Mrs. IV D	Rank	Diff.	Diff. ²
Alcohol	5.48	2	6.71	1	1	1
Friend	9.43	10	11.18	10	0	0
Alone	7.42	5.5	7.62	4	.5	.25
Wife	8.60	9	9.06	7	2	4
Myself in the future	7.68	8	8.60	5	3	9
Sick Leave	4.58	1	7.21	3	2	4
Not Alive	7.42	5.5	10.20	9	3.5	12.25
Iodine	6.40	3	7.07	2	1	1
Mother	7.62	7	8.89	6	1	1
Blackout	6.78	4	9.43	8	4	16
Median	7.42		8.74		Rho: .694 SE: .179	

holism?" The assignment of roles in this pair?

From the first or individual Rorschach administration we could write a thumbnail sketch of his self-image: "Wild, irresponsible, dependent, passive; impulses derived from these are denied, rationalized and dissociated; intoxication permits return of the repressed and self-denigration when sober.

From the consensus procedures we can note how he relates to the different social groups. With his friends he takes a relaxed, passive role of going along with whatever consensus appears to emerge. Even when they agree on the conventional hide for Card IV he represses his highly original and irresponsible response to agree with his friends. With his roommates he becomes more active and attempts to dominate their emerging consensus, even while attempting to maintain affective distance. With his wife our *S* "loses his cool." First he attempts to play a more dominant but yet inappropriately chivalrous role with his frustrating wife. With a high and low status pair, the *S* tries to gain approval of the high status partner. On the second consensus Rorschach with his wife, our *S* is more relaxed and his efforts to dominate are blocked more openly by his wife, especially on those inkblots where he formerly expressed wild and irresponsible self-images.

We can infer a great effort to maintain a proper, Victorian, husband role opposite the traditional role of his Japanese wife. However, he is sabotaged by his own conflicting needs for impulsive and irresponsible activities aggravated by his wife's negativistic but passive attacks on his masculine role. The alcoholism for this pair functions as a release valve for him, and justification of contempt and skepticism by her.

The five methods reviewed add objectivity and further ramifications. Clearly the *S*'s behavior deteriorates in relation to his wife. The frequency and quality of his dominance increases as his effort goes up, even in the face of his wife's reluctance. Areas of conflict in self-expectations versus expected by others are victim-aggressor, affectively close or detached and responsible-irresponsible. Alcoholic binges

would permit return of the repressed side of these conflicts as frustration accumulates.

The content-polarities system reflected areas of ambivalence, or preference for group defined conflicts. The more intimate or natural the involvement the greater the number of common elements reflecting both ambivalence or preference. An artificial grouping with a high-low status pair yielded the least number of common elements or conversely the greatest number of resolutions to group areas of conflict.

The overt failure to achieve consensus on Card IV with his wife is especially poignant from the perspective of marital conflict since collateral information via the semantic differential indicates this is the card they evaluate most similarly with the smallest obtained distance index. In contrast, the control couples' distance index was equal for the same inkblot. They achieved consensus by virtue of the wife's willingness to accept the dominant role of her husband; even though her objective experience with his prolonged illness is one that emphasizes his inadequacy as a husband, breadwinner, male, etc. Our *S* and his wife attempt to play roles which are in conflict. She does not accept his dominance, but expects him to assert traditional male adequacy.

He tries to perform in these terms but expects to fail in such a role.

Conclusions

1. The serial administration of individual and consensus Rorschachs to a *S* with his friends, with his roommates, with his wife, with a high-low status pair, by himself, his wife alone six months later, reflect differences attributable to these differing social contexts.
2. The changes in these different social contexts can be conceptualized as adaptations to variations in the particular group's conflicting expectations for him; e.g.:
 - a. with friends he expects to be irresponsible.
 - b. with roommates he expects to maintain affective distance.
 - c. with his wife he expects to be a victim.
 - d. with a high-low status group he expects to be inadequate.

3. A smaller quality persists which we can call character, or uniqueness. In terms of content-polarities this is the conflicting expectations respecting work and play imposed by his family to which he responds with at least the self-image of happy-go-lucky irresponsibility.

4. The method that elicits information most relevant to our interests is the system of content-polarities which appears to reflect areas of group imposed conflicts on all the participating members. The individual can react in one of three ways in terms of his individual Rorschach responses to the same inkblot areas:

- a. definitions unrelated to the group;
- b. definitions related to one pole, presumably expressing his preferred expectations;
- c. definitions implying both poles and reflecting ambivalence.

5. The Singer ratings of patterns of attention and Loveland's evaluations didn't receive an adequate test since our S's personality disorder of alcoholism doesn't manifest the thinking disturbances observed in schizophrenia, for which the original systems were designed.

6. The Levy-Epstein concepts are basically subsumed under the category of Bauman and Roman's system. However, our S's behavior is significantly describable as "leveling" in order to achieve group equilibrium, for which he pays by frustration of very real and creative impulses that eventually erupt in alcoholic binges.

7. The Bauman and Roman system was easy to apply, reflected differences from protocol to protocol and imply variations in quality of group performance; especially behavior relevant to distress and inherent to the pathological endpoint of alcoholism.

8. The significant data in consensus Rorschachs are the process of mutual influence and accommodation. We study this process by means of content-polarities in group administrations and how an identi-

fied patient reacts to these areas of group imposed conflicts.

9. We anticipate that the individual's behavior in the context of consensus Rorschach is reflected directly in other groups shared behavior, which most psychopathology seems to represent.

REFERENCES

- Bauman, G. & Roman, M. Interaction testing in the study of marital dominance, *Family Process*, 1964 3(1), 230-242.
- Blanchard, W. H. The group process in gang rape. *Journal of Social Psychology*, 1959, 49, 259-266.
- Cutter, F., Farberow, N. L., & Sapin, D. Explaining suicide by Rorschach comparison with survivors. Paper presented at California State Psychological Association Meeting, San Diego, California, January 27, 1967.
- Farberow, N. L. (Chairman) Consensus Rorschachs in the study of problem behavior, symposium. Presented at the meeting of the American Psychological Association, Washington, D. C., 1967.
- Levy, J. & Epstein, N. B., An application of the Rorschach test in family investigation. *Family Process*, 3, (2), 1964, 344-376.
- Loveland, N. The Relation Rorschach. Adult Psychiatry Branch, NIMH, Bethesda, Maryland in press, 1967.
- Loveland, N., Wynne, L. C., & Singer, M. T. The family Rorschach: A new method for studying family interaction. *Family Process*, 2, (2) 1963, 187-215.
- Roman, M. & Bauman, G. *Interaction testing: progress report and manual for administration and scoring*. Mimeographed, Yeshiva University, Div. Soc. & Comm. Psychiat., Albert Einstein College of Medicine, July 1966.
- Singer, Margaret T., & Wynne, L. C. Thought disorders and family relations of schizophrenics. III Methodology using projective techniques. *Archives of General Psychiatry*, 12, 187-200, Feb. 1963.
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Nutrition Imagery in the Rorschach Materials of Food-Deprived, Obese Patients¹

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Summary: Six patients, obese since childhood, were studied as in-patients in a hospital setting for eight months. Three of them were studied for an additional year. They were systematically reduced in body weight, and subsisted solely on a prescribed liquid formula. All Ss had an initial elevation of Rorschach food images prior to weight reduction. Weight reduction did not appreciably alter the number and kind of these images. This was true even when suggestion was used as a possible way of altering nutrition imagery. A need-readiness to project nutrition images on Rorschach may be a fundamental correlate of the state of obesity. A possible relation was suggested between negatively-toned food imagery and motivation for reduced body weight.

Introduction

Those factors which may underlie the emergence of specific types or classes of Rorschach imagery are poorly understood. An understanding of the processes which promote certain varieties of responses would improve our grasp of Rorschach theory and our knowledge about the relation between psychic structure and perception. Particular interest in food responses and their bearing on theory goes back to Brozek's (Brozek, Guetzkow, Vig Baldwin, & Dranstons, 1951) study of perception and association in Ss who experienced experimental semistarvation. Brozek reported only a small non-significant increase in Rorschach food imagery among his Ss during starvation, and an almost identical increase during a rehabilitation period when food intake was not under control. This finding led Brozek to point out that a "wish-fulfillment" explanation for the presence of certain kinds of classes of Rorschach imagery was untenable. Our study of hospitalized obese patients whose weight reduction was carefully controlled enabled us to observe aspects of food and body perception in a group who were food-deprived. Hirsch (1966) and others have reported that there

is a decrease in the size of adipose cells rather than a decrease in the number of adipose cells in both obese and average weight individuals following weight loss. Since our patients were studied over a considerable period of time during food deprivation (they subsisted on a liquid formula) and physiologically may have approached a state similar to that of starvation in non-obese subjects, it seemed worthwhile to isolate and analyze projective imagery related to nutrition in this population. This paper represents a particular focus within a larger investigation of the behavioral response of obese patients to weight reduction. Glucksman and co-workers (Glucksman, Hirsch, McCully, Barron, & Knittle, 1968) have presented the first of a series of quantitative reports on the behavioral responses of our population.

Recently, Masling and co-workers (Masling, Rabie, & Blondheim, 1967) analyzed Rorschach images in obese patients. Unfortunately their data is not comparable with ours because food images per se were excluded. Epstein and Levitt (1962) reported that hungry Ss learned paired associates more rapidly when the stimulus word was a food noun. Spence and Ehrenberg (1964) observed that overweight Ss were equally responsive to both subliminal and supraliminal food stimuli, provided they were deprived. The Rorschach does not provide subliminal stimulus qualities for food any more than any number of other entities. In fact, food in our culture

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is not a common Rorschach image. At the same time, one can introduce a variable that offers at least some degree of combining Rorschach conditions with supra and subliminal food stimuli. This can be done by using suggestion to look for food after the initial Rorschach is completed (limits testing). This may be introduced at a crucial stage and later repeated to check for its effects over time. Thus, direct suggestion may serve as a supraliminal stimulus for a repeated Rorschach at a later time. A food image in a hungry patient should have greater probability of being repeated upon retest with the same stimulus material. Our patients were studied in depth over a comparatively long period of time. They were starved to a considerable degree, and were deprived of the gustatory sensation process. Their environment was controlled in a systematic fashion as much as possible. A focus on nutrition imagery in the projective materials of our Ss offered the opportunity to check certain observations reported by others (Stunkard & McLaren-Hume, 1959), since our conditions were less simulated and more intensively controlled. It also provided another methodologic approach to a further understanding of obesity and the theory of Rorschach perception.

Subjects and Method

A group of six severely obese adult patients seeking weight reduction were hospitalized in the Behavioral-Metabolic Unit of the Rockefeller University Hospital. All the patients were of at least normal intelligence, and had been obese since childhood. (Obesity was defined as a body weight of more than 20% fat tissue.) Table 1 shows age, I. Q. range, and other aspects of the group. Three of the patients were hospitalized and studied during an eight-month period, and the other three were studied for an additional year. The experimental program of weight reduction for the patients consisted of an initial six-week period of weight maintenance (Period I), followed by a 15-week period of weight loss (Period II), and a final six-week period of weight maintenance (Period III). A second period of weight loss (Period IV) lasted 52 weeks for three patients. Caloric intake during the final period of weight

maintenance enabled the patients to remain at their admission weight. Weight loss was accomplished by the administration of 600 calories per day. Caloric intake during the final period of weight maintenance allowed the patients to remain at the lowest weight achieved during weight reduction. The total daily caloric intake was provided by feeding composed of orally administered liquid formulas with known amounts of carbohydrate, protein, fat, minerals, and vitamins (Ahrens, Dole, & Blankenhorn, 1954). Solid food was not allowed except for a brief period before discharge from the hospital.

The Rorschach was administered individually along with several other projective devices. It was administered first at the beginning of Period I, then at the termination of Period II, and at the end of Period III, prior to the return to solid food. For the three patients who remained in the hospital for another year, a fourth set of data was obtained at the end of Period IV, just prior to the time of their discharge. Table 1 shows weight changes coinciding with the time of Rorschach administration. After a complete Rorschach was obtained at Period II, the examiner returned the Rorschach plates to the patient and requested: "Please look back through all the cards and see if you can find anything that looks like food." All remarks and images were recorded. This limits testing procedure was not repeated at testing Period III. However, for three patients, limits testing for food was repeated at the end of testing during Period IV. Table 3 shows the effects this request had on the total number of nutrition images produced.

Those Rorschach images which fell under a category termed *Nutrition* were analyzed. This category was defined by seven classes of images whose combined components represented a generic composite designated *nutrition*. It seemed important not to use certain common theoretical terms whose definition is seldom precise. For this reason, such descriptive terms as orality, oral dependence, oral sadism, and symbolic material that could be unconscious substitutes for any aspect of so-called oral experience were avoided. In the same fashion, scoring unequivocal food responses alone seemed to do vio-

lence to certain images in the data that were not food per se, but which had obvious relevance to the physical condition being studied. In addition to the senior author, an independent examiner was asked to designate a list of all Rorschach images in the groups' materials which appeared to him to pertain to the nutrition process. Responses so grouped were combined and classes or categories were given the following designations: (1) organs or products of digestion (total of 15), (2) food per se (total of 78), (3) mouth activity (total of 7), (4) non-popular animals commonly used for food (total of 12), (5) effects of nutrition (total of 3), (6) food utensils (total of 6), (7) carrion (total of 3). From the total shown above, it may be seen at once that food itself was by far the most frequent of these subcategories. Examples of each category were the following: (1) "stomach," "intestines"; (2) "lettuce," "steak on charcoal"; (3) "person eating from bowl that's not there," "faces with bubbles coming out of the mouths"; (4) "frog" on Plate VIII, "ducks" on Plate II; (5) "fat man sitting on stool," "Jolly Green Giant who fell back and squashed a cow"; (6) "picnic basket," "garbage pail"; (7) "vultures with a carcass," "hyenas ripping on a dead animal." Our aim was to do no violence to the range and nuances of images associated with nutrition and, at the same time, to avoid ambiguity. (The bulk of the images were food, and there was no ambiguity there.) Although category four might seem ambiguous, it was decided that the images included had direct relevance to our analysis. There were only a dozen of these images, but in every case the patient himself authenticated the non-popular animal as being associated with food. For example, the popular crabs on Plate X were never included, but "King Crab" for an unusual area on Plate VIII was included (reported by the patient as food). Animals absent from the common diet were not included (as deer). "Duck" on Plate II was counted because it is a highly uncommon association as an animal for this card; the patient associated it with food at some time during limits testing, and duck is a common food. Even though certain images could easily be classified as "orally ag-

gressive" (i.e., "cannibals ripping a carcass"), such a classification was avoided because it was difficult to be precise about what this aggressive act entailed for the particular individual who produced the image. The data might have been analyzed in any number of other ways, but it was our intention to avoid the ambiguity of certain psychoanalytic definitions in this context.

Findings

Table 1 shows the extent of weight loss for the group and at the times of Rorschach examination. At the end of Period III, the mean length of hospitalization for the six patients was eight months, and the mean weight loss for the group was 86.7 pounds. The three patients who stayed a year longer were reduced to normal weight for their age and height. None received any formal psychotherapy during their hospitalization.

Table 2 shows the individual distribution of nutrition responses and their relation to the total number of Rorschach responses produced at any one examination. For the group as a whole ($N = 6$), the percentage of nutrition responses decreased even though the total number of Rorschach responses increased. At the end of the first weight loss period (Period II), the raw number of nutrition responses increased slightly for the group, but the greater number of responses in general reduced the percentage of nutrition responses at that period. At Period III there was a small decrease in the percentage of food responses, while the total number of responses was essentially the same as at Period II. When Period IV is considered ($N = 3$), two patients showed a small decrease in the percentage of food responses (after a year and eight months, and a return to a normal body size), while the third patient showed an increase. However, when the percentage of nutrition responses of the three patients who remained for Period IV are compared with their percentage of nutrition responses at Period III, all three showed a percentage increase in food responses when the total number of responses they produced is considered. When percentages at Period I are compared with those at the end of Period III, four of the patients showed

some decrease in percentage of nutrition responses, while two showed an increase. The findings at Period IV tend to reverse the group trend at Period III.

Even though inspection suggested that statistical tests would lack utility with our data, several types of tests were applied. These included forms of chi square and rank order techniques. None proved useful primarily because the number of raw-score food images tended to remain constant or vary against a much larger change in the total number of responses at successive examinations. Raw scores, directional trends, and percentage changes have been utilized in evaluating the data.

Table 3 shows the raw scores of the number of nutrition responses apart from percentages and total number of responses, and compares them with the increase in number of nutrition responses obtained by suggestion in limits testing (Periods II and IV). We may see further the distribution of these responses and their relation to the total number of responses after limits testing was introduced during Period II.

Table 3 indicates that our supraliminal stimulus (that of directing the patient to look actively for food in the Rorschach plates at Period II) produced no effect whatever on the number or kind of nutrition responses which appeared at Period III. No limits testing for food was done at Period III. However, at Period IV, of the three patients who remained, all showed an increase of one nutrition response when they were tested approximately a year later. For one patient, this added nutrition response (a food utensil) was the same image given during limits testing at Period II. For most of the group, when food responses were asked for at limits testing (Period II), additional food images appeared easily. The three patients who remained for an additional year were the three who gave the fewest food responses on request. Table 3 shows that these three gave even fewer additional images at the second testing of limits. Further, no entirely new food image emerged for anyone at final testing (all were reported at some earlier time).

Table 4 shows the frequency distribution of nutrition responses in relation

Table 1
Distribution of Age, Sex, Intelligence,
and Weight Changes for the Group

Patient	Age	Sex	Full Scale I. Q.	Weight on Admission ^a (lbs.)	Weight at Period II ^a (lbs.)	Weight at Period III ^a (lbs.)	Weight loss at 8 months (lbs.)	Weight at Period IV ^a (lbs.)	Weight loss at 20 months (lbs.)
(1)	23	M	128	407.0	330.5	300.7	106.3	189.8	217.2
(2)	20	M	97	396.0	325.6	300.0	96.0	175.1	220.9
(3)	20	F	90	213.4	179.9	170.9	42.5	124.0	89.4
(4)	36	F	134	358.6	290.4	263.7	94.9		
(5)	21	M	111	304.7	229.3	211.6	93.1		
(6)	27	F	112	325.6	245.6	238.5	87.1		

^a Weight on date of testing.

Table 2
Number and Percentages of Nutrition Responses
Compared with Total Number of Responses

Patient	Period I			Period II			Period III			Period IV		
	R	NR	% NR	R	NR	% NR	R	NR	% NR	R	NR	% NR
(1)	28	6	23.0	38	8	21.0	42	7	16.6	45	8	17.7
(2)	24	6	23.3	23	3	13.0	22	3	13.6	23	4	17.3
(3)	16	1	6.2	15	1	6.6	18	1	5.5	16	2	12.5
(4)	23	5	21.7	36	9	25.0	30	5	16.6			
(5)	32	4	12.1	38	5	13.1	39	5	15.1			
(6)	33	6	18.1	34	6	11.1	32	6	18.7			
Totals	156	28	17.9	184	32	17.3	183	27	14.7	84	14	16.6

R = Total Responses

NR = Nutritional Responses

Table 3
Raw Scores, Nutrition Responses, and Impact of
Suggestion on Number of Nutrition Responses

Patient	Period I		Period II			Period III		Period IV		
	R	NR	R	NR	NL	R	NR	R	NR	NL
(1)	28	6	38	8	1	42	7	45	8	1
(2)	24	6	23	3	3	22	3	23	4	2
(3)	16	1	15	1	1	18	1	16	2	0
(4)	23	5	36	9	5	30	5			
(5)	32	4	38	5	3	39	5			
(6)	33	6	34	6	7	32	6			

R = Total Responses

NR = Nutrition Responses

NL = Nutrition Responses Reported in Limits Testing which did not occur in NR of the same period.

Table 4
Frequency Distribution of Nutrition Responses
For Individual Rorschach Plates

Plate No.	Nutrition Resp.	Rank Order
I	8	7
II	18	2
III	15	4
IV	9	6
V	4	9
VI	2	10
VII	5	8
VIII	13	5
IX	16	3
X	27	1

to individual Rorschach plates. Plates X and II elicited the greatest number of these responses, while V and VI produced the least (all in that order). The ten cards were divided equally, in that the colored plates ranked serially as producing the most nutrition responses, and the achromatic the least.

Discussion

Given the conditions we have described the data indicate that directions to find food images in Rorschach stimuli had little or no influence on subsequent Rorschach images. This result was independent of the total number of responses at any given time. A similar pattern was found in a seventh obese patient tested in the same setting, but one not included in the original group. Glucksmann and co-workers (1968) have reported that these same patients expressed frequent fantasies of food and eating during clinical interviews. None of the patients made any extensive effort to suppress thoughts about food. Most had colored magazine pictures of food decorating their rooms. All began with a remarkably elevated Rorschach food content. Even so, most found new food responses with ease when they were asked to do so. That form of testing the limits in a food-deprived group did not materially affect later Rorschach materials of the same patient.

This data supports the notion that a relationship exists between an individual and his imagery projected onto ink blots

which may not be appreciably altered by outside interferences. Most Rorschach workers know that *conscious intent* on the part of the S to influence his images frequently has little effect on what actually ensues. McCully (1965) has made particular note of this tendency before in discussing underlying processes in the Rorschach experience. It happens that a S who does not *consciously* believe he is sexually deprived may produce a flood of sexual responses. The meaning as to why these responses appear seems to transcend the outer state of the S. Failure to take this into account often interferes with interpretation of research data. We do not wish to imply that Rorschach imagery cannot be influenced, but we do emphasize that it is probably much less subject to influence than might be supposed. Our patients showed changes among Rorschach variables other than those described here. Qualities associated with anxiety and depression fluctuated. Glucksmann's (Glucksmann et al., 1968) paper describes them in detail. We merely wish to emphasize that the content of conscious preoccupations and Rorschach content may be quite disparate. Our subjects began with elevated food imagery, but it did not change significantly as the study evolved. Perhaps this has to do with the readiness for psychic experience to precipitate. Similarly, a particular dream may be a function of readiness for certain kinds of psychic experience to stimulate the visual cortex. When Rorschach images involve genuine

symbol formation, there is doubtless a close kinship with dream imagery. Complex inner processes are mediated by the ink blots, and the images that appear may correspond with both inner and outer experiences as they play across the unique structure of a given individual. That some images vary in time and correspond with experiential changes, while others remain constant, corresponds to life and its fluctuation.

On initial examination, the groups' mean percentage of food (per se) responses was 13.5%. Using our definition of nutrition imagery, the groups' mean percentage was almost 18.0%. This is much above the percentage that might be expected for an average sample in our culture. Brozek's (Brozek et al., 1951) group of 32 patients had an initial Rorschach food count mean of 1.6%. A slight rise (mean of 2.4%) was found during semistarvation. During a rehabilitation (no restriction of food) period, their mean food content rose to 3.1%, but none of the changes was significant. None of the changes in food imagery count was significant for our group either. In one *S*, whose number of Rorschach responses stayed relatively constant, there was a decrease in food count percentages at Periods I and III, but it rose over the longer period (IV). For the rest of the group, the food count fluctuation was small in relation to the change in total or non-food responses at every stage. Brozek's *Ss* were not prevented from eating solid food, and their Rorschachs were obtained by group methods. Further, they were not obese. Yet, both in his study and ours, food imagery was not significantly altered by the conditions of the experiment. It may be quite significant that our *Ss* began with a high nutrition imagery. Perhaps something in the nature of being obese over a long period of time increases the readiness of psychic processes to throw up nutrition imagery at a relatively constant rate. When first tested, no appreciable time had elapsed regards the effects of hospitalization, formula, or caloric deprivation. Hence, as Brozek et al. (1951) observed, and Spence and Ehrenberg (1964) have more recently repeated and emphasized, wish-fulfillment seems to have little to do with the

content of Rorschach imagery. Perhaps such an assumption was naive, since much suggests that processes which contribute to the coming about of Rorschach images are complex and multi-determined.

It should be remembered that most food images on Rorschach are uncommon ones, and the majority of those given by our *Ss* were original responses. Hence, they were highly personal or individualistic. All had a dietary concern, and they could anticipate what would happen to them in the hospital. Elevated food responses was a group trend. Food certainly interested them, but the longer they were on a formula, and the longer their tastes were deprived, did not alter the state of Rorschach food content. Oddly, Brozek's *Ss* showed an increase in food imagery when there was no limitation about the *Ss'* diets.

We suggest that a perceptual readiness to construct nutrition imagery on Rorschach is related to the condition of being obese, or dietary concern. This does not simply mean that bakers tend to see bread on Rorschach. It may mean that their perception of bread on Rorschach may have a causal relationship to their occupation. We do not yet know how to identify the processes that underlie a group characteristic (elevated nutrition imagery). We admit that our population was small indeed, but for some *Ss*, our measures occurred under controlled conditions for a year and a half. Brozek et al. (1951) were unable to account for the rise in food responses after there was no restriction on food. The rise took place even though total responses decreased. He remarked he could safely say the rise was not a function of increased "food drive." Spence and Ehrenberg (1964) have emphasized the drive state as being a more critical factor than the stimulus in influencing behavior. Neither our data nor Brozek's supports this *per se*. Spence and Ehrenberg (1964) go on to state that a stimulus must resonate with an aroused and congruent drive in order to have a detectable influence on behavior. We suggest this is another way of saying that inner processes outside conscious awareness influence a precipitated pictograph or Rorschach perception. This would be in addition to the

outer condition and the nature of the ink blot stimulus structure itself.

We found the same relationship between chromatic stimuli and their greater facility to elicit nutrition responses that Levine, Chein, and Murphy (1942) found a quarter of a century ago. We expected Plate X might lend itself to nutrition imagery, but Plate II's second rank was more of a surprise. It emphasizes the relation between strong feeling (color) and food for our Ss. Yet, we found certain food or food-associated images in our Ss which would be disagreeable for humans to partake or ingest. This may be an important finding. All six patients produced at least one such image attended by strong, unsavory qualities. Examples were, "That card reminds me of having the 'runs' going to the bathroom"; "The contents of a garbage pail"; "Jackals eating remains." It may have been that something connected with this kind of negatively-toned quality or affect enabled them to agree to the rigors of dietary deprivation and experimentation. Those three patients who volunteered to spend an additional year in the hospital were those who gave the least amount of spontaneous food imagery at limits testing. We refer to what may be correlates with internal discipline. Perhaps an element of hostile feelings toward food or nourishment exists beside the need to ingest excessive food in the patient obese since childhood. Being willing to *do* something about obesity may be connected with a facility to inhibit food impulses. It would be interesting to discover whether obese individuals with an inertia about reducing have the negatively toned Rorschach images we found. Bruch (1957) has reported that obese Ss frequently return to original weight levels after intensive reduction. The S in our study who produced the least negatively toned food images and who had the most food images was the one who least maintained her reduced weight status upon discharge. By the same token, at the end of two years, the only S who had maintained her weight-reduced status was the S who produced the highest number of unsavory nutrition images. Our population was too

small to offer more than notation of these findings, but they may serve as tentative leads for later research.

REFERENCES

- Ahrens, E. H. Jr., Dole, V. P. & Blankenhorn, D. H. The use of orally fed liquid formulas in metabolic studies. *American Journal of Clinical Nutrition*, 1954, 2, 336-342.
- Brozek, J., Guetzkow, H., Vig Baldwin, M., & Dranstun, R. A quantitative study of perception and association in experimental semi-starvation. *Journal of Personality*, 1951, 19, 245-263.
- Bruch, H. *The Importance of Overweight*. New York: Norton, 1957.
- Epstein, S., & Levitt, H. The influence of hunger on the learning and recall of food related words. *Journal of Abnormal & Social Psychology*, 1962, 64, 130-135.
- Glucksman, M., Hirsch, J., McCully, R., Barron, B., & Knittle, J. The response of obese patients to weight reduction: A quantitative evaluation of behavior. *Psychosomatic Medicine*, 1968.
- Hirsh, J., Knittle, J., & Salans, L. Cell lipid content and cell number in obese and non-obese human adipose tissue. *Journal of Clinical Investigation*, 1966, 45, 1023.
- Levine, R., Chein, I., & Murphy, G. The relation of the intensity of a need to the amount of perceptual distortion. *Journal of Personality*, 1942, 13, 283-294.
- Masling, J., Rabie, L., & Blondheim, S. Obesity, level of aspiration, and Rorschach and TAT measures of oral dependence. *Journal of Consulting Psychology*, 1967, 31, 233.
- McCully, R. S. Process analysis: A tool in understanding ambiguity in diagnostic problems in Rorschach. *Journal of Projective Techniques & Personality Assessment*, 1965, 29, 436-444.
- Spence, D., & Ehrenberg, B. Effects of oral deprivation on responses to subliminal and supraliminal verbal food stimuli. *Journal of Abnormal & Social Psychology*, 1964, 69, 10-18.
- Stunkard, A. J., & McLaren-Hume, M. Results of treatment for obesity: Review of literature and report of series. *Archives of Internal Medicine*, 1959, 103, 79.

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Birth Order and Sex Differences In Complexity-Simplicity, Color-Form Preference and Personality

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Summary: With 196 undergraduate Ss it was found that (a) females preferred more complexity than males, and first-born males and later-born females preferred more complexity than their respective sex groups; (b) first-born males and later-born females checked adjectives which were like those of independent Ss in a conformity study; (c) there were no significant differences with the Internal-External Control Scale; (d) males preferred more form than females. These significant findings were related to previous research in personality and in creativity.

Murray and Jackson (1964) investigated color-form preference in relation to self-descriptive and test measures of personality. These investigators found some support for Rorschach's (1921) notion that color-form preference is related to personality, with color reflecting impulsivity. Complexity-simplicity preferences have also been related to individual differences. Barron (1963) has summarized a large body of research which suggests that preference for complexity is associated with creativity and related personality characteristics. In addition, he also has indicated that self-descriptions on certain of Gough's (1960) Adjective Check List (ACL) items discriminated between yielders and independent subjects (Ss) in an Asch conformity study.

Although there has been an increasing amount of research on birth order, current findings (Sampson & Hancock, 1967; Eisenman & Platt, 1968) suggest that sex of *S* should be considered along with ordinal position. For example, employing the polygons used here in measuring complexity-simplicity, Eisenman (1967a, 1967b) found both birth order and sex differences. First-born males and later-born females preferred more complexity than other males or females respectively. In addition, Eisenman (1967b) found that females preferred more complexity than males, the relationship being stronger for sex differences than for ordinal position. Since Barron (1963) and Eisenman (unpublished data) have obtained evidence linking together preference for complexity and creativity, it appears that complexity-simplicity preferences are related to important individual differences.

The design of the current study called

for considering birth order and sex differences in Ss' preferences for complexity-simplicity, color, form, or a combination of color and form, and two personality measures: the Internal-External control scale discussed by Rotter (1966) which assesses expectation for internal vs. external control of reinforcement, and the above-mentioned adjectives from Gough's ACL which Barron has reported as distinguishing between conforming and independent Ss. Although aesthetic preferences are not always strongly linked to personality (Barron, 1965), previous research would suggest that the following relationships might obtain: first-born males and later-born females will be higher than their respective sex groups in (a) preference for complexity; (b) self-description on the Gough ACL adjectives which independent Ss checked; (c) more internal than external in their perception of reinforcement. With regard to the color-form preferences, too little seems known to make any specific predictions regarding birth order and sex differences.

Method

Subjects

The Ss were 196 undergraduates in Psychology of Adjustment classes at the University of Georgia. Ss were tested over two quarters to insure as near as possible that all students in Psychology of Adjustment during these two quarters would be tested. The Ss were primarily non-psychology majors; there were 67 first-born males, 32 first-born females, 55 later-born males, and 44 later-born females. Of the first-born Ss there were 17 males who were only-children, and 9 fe-

male only-child Ss. However, separate analyses indicated that our only-child Ss did not score differently from first-born Ss on any measures, and they are consequently combined with first-born Ss.¹

Procedure

All Ss were tested during their class period, with the permission of their various instructors. The following stimulus materials were employed.

Complexity-simplicity. Nine randomly shaped polygons, taken from Vanderplas and Garvin (1959) were employed. These polygons differed on the complexity-simplicity dimension in that three each were 4, 12 or 24 point shapes. They were mounted on a large cardboard to facilitate group administration. Complexity was defined by the number of points (Attneave, 1957; Attneave & Arnoult, 1956). A summary of several studies employing these polygons can be found in Eisenman (1967c). Ss were asked to list their three most preferred polygons, and a complexity score was obtained by summing the number of points on the three most preferred polygons.

Adjective Check List. Adjectives taken from the Gough ACL, which Barron (1963, p. 172) has presented as discriminating between independent and yielding Ss at the .05 and .01 levels, were employed. They were headed "Personal Check List" and distributed to Ss on a sheet of paper, with the instructions being to check the adjectives which applied to them. A score was obtained by crediting S with 2 points every time he checked an adjective checked by independent Ss in the previous study, and crediting 1 point every time an adjective associated with yielders was not checked.

Internal-External Control. The James (1957) version of the Internal-External Control Scale (I-ECS) was employed. This scale is slightly longer than the more recent version presented by Rotter, but both are concerned with S's generalized

expectancy for internal (personal) vs. external (fate, chance, luck, etc.) control of reinforcement.

Color-Form-Other. (C-F-O). Ss were presented with three each of triangles, squares, and circles for a total of nine objects, mounted on a large cardboard. Each object was orange, gold, or green. Ss were asked to pick the three which they felt best went together. This allowed Ss to group on the basis of color, form, or a combination of the two.

Experimental design. The data were analyzed by three separate 2 X 2 analyses of variance for complexity-simplicity scores, ACL scores, and I-ECS scores. Since the *N* varied slightly due to the original sample size and to incompleteness of some Ss' responses to certain measures, an unweighted-means analysis of variance (Winer, 1962) was employed. Data for the C-F-O were analyzed by two-tailed chi-square tests for frequency of Ss making each choice.

Results

Table 1 indicates sex and the sex X birth order interaction were both significant determinants of complexity-simplicity preferences. The mean scores presented in Table 1 show that females preferred more complexity than males, and that first-born males preferred more complexity than later born males, while later born females preferred more complexity than first born female Ss.

A similar interaction was obtained for the ACL data. First born males scored more in the independent direction than later-born males, while the relationship is reversed for female Ss; later born females obtained a more independent score than first-born females ($p < .05$).

Neither main effects nor interaction are significant with the I-ECS. Further attempts to see if a moderator variable approach might yield significant results for the I-E scale in various combinations with other measures also failed to indicate significance.

A significant chi square was obtained for males vs. females on C-F-O, due to males' greater preference for form ($X^2 = 7.78$, $df = 1$, $p < .05$).

¹ For a study suggesting important birth order differences, see Eisenman and Taylor (1966) in which combination of first born and only children would have been a dubious procedure.

Table 1
Statistical Analyses and Mean Scores

Analysis of Variance and Mean Complexity Scores For Birth Order and Sex			
Source	df	MS	F
Birth Order (A)	1	107.60	<1
Sex (B)	1	1390.92	6.92**
A X B	1	791.94	3.94*
Within	192	201.00	

Mean Complexity Scores		
	Males	Females
First Born	49.8	51.4
Later Born	43.4	57.6

* $p < .05$

** $p < .01$

Discussion

The data indicate that both birth order and sex differences are present in complexity-simplicity, ACL, and C-F-O preferences. No significant findings emerged for the I-ECS. The direction of the results indicates that female college students, especially later born females, may be somewhat misjudged if we consider only the past research studies which indicated that females conform more (Crutchfield, 1955), make more severe moral judgments (Eisenman, 1967d), are more inhibited sexually (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953), and otherwise seem conservative, conventional, and unlikely to possess the traits most often associated with creativity (Anderson, 1959; Barron, 1963; Taylor, 1964). The present results do not dispute the findings of previous studies. Rather, the present data suggest that there may be another side of female behavior which is not fully tapped by the above-mentioned studies which place females in a more conventional, inhibited light. Specifically, it may be that females are more open than males in terms of emotional expression, although females may be more susceptible to social influences as well. The openness is inferred from their greater preference for complexity in the present research, their checking adjectives associated with independence rather than yielding, and

their random responses on the C-F-O measure, in contrast to males who overchose to group by form, perhaps indicating a greater need for structure, control of emotions, rigidity, or tendency toward rationality.

The relationships are rather complex and cannot be fully explained on a male vs. female basis. On two measures (complexity-simplicity, and C-F-O), sex was a significant variable. But, the birth order X sex interaction was likewise significant on two measures (complexity-simplicity and ACL). To some extent it appears that openness to emotional expression may be more true of later-born females than of first-born female Ss. Why should this be so? Although nothing in the present research answers this question, it may be that the first-born female child experiences overly intensive socialization pressures, due to parental concern and societal demands for more conformity by females. By the time the second female child is born, the parents may be less anxious about how to handle her (Schachter, 1959) and may ease up in socialization. Barron (1963) has indicated how overly intensive socialization can result in repressive overcontrol, and thus be negatively related to creativity. Although this explanation seems plausible, direct study of children will be needed for its confirmation.

With regard to first-born males, the present data are consistent with the association between being a first-born male and need achievement (Sampson & Hancock, 1967). Following Barron (1963), Pryon (1966) and others, it would seem that preference for simplicity is related to individual needs for simple order, while preference for complexity would be more readily associated with a complex, open life style in which personal change, including achievement, might more readily occur.

The obtained birth order and sex differences on the complexity-simplicity dimension are consistent with Eisenman (1967a, 1967b). These findings suggest that there may be stable birth order and sex differences associated with preference for stimulus variability. Therefore, both ordinal position and sex of *S* should be considered in future research in which the stimulus materials differ in complexity.

The failure of the I-E scale to show any significant birth order or sex differences is interesting, particularly in light of the significant results obtained with the other personality measure, the ACL. Since the ACL items used in the present study had previously discriminated between yielders and independent *Ss* (Barron, 1963), it may be that it is a more relevant measure for the variables under consideration. The data on the I-E scale are impressive (Rotter, 1966) but it should be remembered that internal vs. external expectations of reinforcement is not necessarily the same thing as internal vs. external reliance for decision making, (Eisenman & Platt, 1968). Thus, first-born males and later-born females may be more "internal" in the sense that they are more oriented toward some kind of independence or personal achievement, without being more likely to think of reinforcement as internally based, compared to later born males and first-born females.

Barron (1963) has tied the ACL items used here to his notions about creativity. Because of this and because of the significant findings with the ACL items but not with the I-E scale, it is interesting to note that many adjectives which independent *Ss* checked suggest dissatisfaction, e.g., gloomy, bitter, dissatisfied (see Bar-

ron, 1963 p. 188). Perhaps general dissatisfaction sometimes serves as a motivator, causing *S* to seek a better way of life. In contrast, the adjectives checked by yielders suggest a much greater acceptance of things in general: e.g., contented, conservative, stable.

Although specific Rorschach notions about color and impulsivity were not tested in the present study, the results are consistent with viewing personal preferences for color-form, and complexity-simplicity as indicative of important individual differences. The fact that significant birth order X sex interactions were obtained for both the complexity-simplicity and ACL scores indicates the complexity of the subject matter under consideration. However, the several significant findings suggest that further conceptualization and testing of related hypotheses may be quite fruitful. Preferences for complexity-simplicity and color-form are related to other kinds of behavior, which is consistent with the Murray and Jackson finding and with the underlying belief of Rorschach. Developmental changes in perceptual preferences (Brennan, Ames, & Moore, 1966; Hershenon, 1964; Hershenon, Munsinger, & Kessen, 1965) and the birth order and sex differences obtained here suggest that preferences of our college students may be based partly on early childhood experiences. Since children are often treated differently by their parents as a function of the child's birth order and sex, parents may affect the perceptual preferences which are expressed during adulthood. Developmental studies in perception and other areas would do well to specify sex and birth order of *Ss*, as few do at present.

REFERENCES

- Anderson, H. H. (Ed.) *Creativity and its cultivation*. New York: Harper & Row, 1959.
- Attneave, F. Physical determinants of the judged complexity of shapes. *Journal of Experimental Psychology*, 1957, 53, 221-227.
- Attneave, F., & Arnoult, M. D. Methodological considerations in the quantitative study of shape and pattern perception. *Psychological Bulletin*, 1956, 53, 452-471.
- Barron, F. *Creativity and psychological health*. Princeton, N. J.: Van Nostrand, 1963.

- Barron, F. The psychology of creativity. In *New Directions in Psychology II*. New York: Holt, Rinehart & Winston, 1965. Pp. 1-134.
- Brennan, W. M., Ames, E. W., & Moore, R. W. Age differences in infants' attention to patterns of different complexities. *Science*, 1966, 151, 354-356.
- Crutchfield, R. S. Conformity and character. *American Psychologist*, 1955, 10, 191-198.
- Eisenman, R. Birth order and sex differences in aesthetic preference for complexity-simplicity. *Journal of General Psychology*, 1967, 77, 121-126. (a)
- Eisenman, R. Complexity-simplicity: II. Birth order and sex differences. *Psychonomic Science*, 1967, 8, 171-172. (b)
- Eisenman, R. The psychology of modern art. In G. P. Powers & W. Baskin (Eds.), *New vistas in psychology*. New York: Philosophical Library, 1967. (c)
- Eisenman, R. Sex differences in moral judgment. *Perceptual and Motor Skills*, 1967, 24, 784. (d)
- Eisenman, R. & Platt, J. J. Birth order and sex differences in academic achievement and internal-external control. *Journal of General Psychology*, 1968, 78, 279-285.
- Eisenman, R. & Taylor, R. E. Birth order and MMPI patterns. *Journal of Individual Psychology*, 1966, 22, 208-211.
- Gough, H. G. The adjective check list as a personality assessment technique. *Psychological Reports*, 1960, 6, 107-122.
- Hershenson, M. Visual discrimination in the human newborn. *Journal of Comparative and Physiological Psychology*, 1964, 58, 270-276.
- Hershenson, M., Munsinger, H., & Kessen, W. Preference for shapes of intermediate variability in the newborn human. *Science*, 1965, 147, 630-631.
- James, W. H. Internal vs. external control of reinforcements as a basic variable in learning theory. Unpublished doctoral dissertation. Ohio State University, 1957.
- Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. *Sexual behavior in the human male*. Philadelphia: Saunders, 1948.
- Kinsey, A. C., Pomeroy, W. B., Martin, C. E., & Gebhard, P. H. *Sexual behavior in the human female*. Philadelphia: Saunders, 1953.
- Murray, J. E. & Jackson, D. N. Impulsivity and color-form abstraction. *Journal of Consulting Psychology*, 1964, 28, 518-522.
- Pryon, B. A factor-analytic study of simplicity-complexity of social ordering. *Perceptual and Motor Skills*, 1966, 22, 259-272.
- Rorschach, H. *Psychodiagnostic*. Bern: Hans Huber, 1921.
- Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 1966, 80, (1, Whole No. 609).
- Sampson, E. E. & Hancock, F. T. An examination of the relationship between ordinal position, personality, and conformity: An extension, replication, and partial verification. *Journal of Personality and Social Psychology*, 1967, 5, 398-407.
- Schachter, S. *The psychology of affiliation*. Stanford: Stanford University Press, 1959.
- Taylor, C. W. *Widening horizons in creativity*. New York: Wiley, 1964.
- Vanderplas, J. M. & Garvin, E. A. The association value of random shapes. *Journal of Experimental Psychology*, 1959, 57, 147-154.
- Winer, B. J. *Statistical principles in experimental design*. New York: McGraw-Hill, 1962.
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On the Measurement of Hostility, Aggression Anxiety, Projection and Dependency¹

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Summary: A 114-item sentence completion test of hostility, aggression anxiety, projection of hostility, and dependency was scored with an explicit scoring standard, correlated with extrapunitive and intro-punitive peer ratings of 101 subjects, and cross-validated against a second group of 101 subjects. The reliability of peer ratings ranged from +.85 to +.91. Interscorer reliabilities for the sentence completion scales ranged from +.90 to +.98, while odd-even reliability was +.78. Significant correlation ratios between peer ratings and the hostility and aggression anxiety scales of the test were obtained.

On the basis of 29 studies reviewed by Zimmer (1956), it was concluded that sentence completion test criteria were better predicted by (1) the use of the detailed and specific scoring standards with numerous examples to typical responses, as opposed to global, impressionist judgments, and (2) by deriving a single behavior variable from a group of sentence stems, as compared to the extraction of a multiplicity of variables from identical stems. Subsequent studies using the sentence completion test support this position (Fitzgerald, 1958; Hiler, 1959; Kingsley, 1961; Veldman and Worchel, 1961; Harsch and Zimmer, 1965). Renner, Maher and Campbell (1962) scored the same test items for three separate variables with the aid of a scoring standard. They obtained a significant correlation with peer ratings for one of their three variables, hostility, when their male and female subjects were combined. Their other two variables, anxiety and dependency, were not as consistent.

The present study compared four variables, hostility, aggression anxiety, projection of hostility, and dependency, each based on different sentence completion stems specifically designed to elicit relevant responses, and scored with an explicit scoring standard, to peer ratings of extrapunitive and intro-punitive behavior.

Method

Subjects

The 202 male Ss were drawn from university fraternities, a university summer forestry camp, and an AFROTC camp. These Ss were selected because of their close association with one another, especially in the two camps where they had been assigned to small groups of approximately 6 to 24 individuals, from the beginning of the camp sessions. The minimum times these groups had been together were: fraternity, 8 months; AFROTC camp, 3 months; forestry camp, 3 months. There were 19 groups of six Ss; 12 groups of five; 4 groups of four; and 4 groups of three. The mean age of the Ss was 22.16 years, with a standard deviation of 2.18 years, and a range from 17 to 32 years. Thirty-five of 237 Ss originally tested were eliminated because of incomplete ratings and unscorable sentence completion materials.

Peer Rating Scale

This scale consisted of 17 descriptive statements about behavior related to hostility, ranging from extrapunitive, e.g., "is critical", (items 1-8) to intro-punitive, e.g., "gets depressed", (items 10-17) extremes. Each statement was rated as (1) often, (2) occasionally, (3) rarely, and (4) almost never. For scoring purposes, these four categories were collapsed into two. The first two categories were given a numerical value of one, and the last two categories a value of two. Eighteen judges, consisting of professors and advanced graduate students in psychology, were asked to state in their own words what

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Table 1
Correlation Ratios Between Peer Ratings and ZSCT

Sentence completion test scales	Regression of Peer Ratings on ZSCT				Regression of ZSCT on Peer Ratings			
	Extrapunitive peer ratings		Intropunitive peer ratings		Extrapunitive peer ratings		Intropunitive peer ratings	
	First 101 Ss	Second 101 Ss	First 101 Ss	Second 101 Ss	First 101 Ss	Second 101 Ss	First 101 Ss	Second 101 Ss
Hostility (Intropunitive)	.71*	.70	(.37)	(.65)	.45*	.47*	(.38)	(.53)
Aggression Anxiety (Counterphobia)	.67*	.68*	(.63*)	(.69*)	.41	.28	(.45)	(.35)
Projection (Introception)	.63	.67	(.51)	(.57)	.26	.37	(.28)	(.35)
Independency (Dependency)	.63	.71	(.47)	(.62)	.43	.35	(.34)	(.40)

* $p < .05$

they thought each scale item was measuring. Eighty per cent of these open-ended statements were designated by five additional judges as describing extrapunitive behavior for items 1-8 and intropunitive behavior for items 10-17. The pooled rankings of the items by 10 of the original judges correlated +.90 with the rankings derived from the scalogram analysis. A scalogram analysis on a sample of 100 peer rating scales, drawn at random from the 866 completed forms, was performed for the eight extrapunitive and eight intropunitive and eight intropunitive items, yielding coefficients of reproducibility of .94 for the extrapunitive scale and .90 for the intropunitive scale, and respective minimal marginal reproducibility of .65 and .45. Reproducibility for individual items ranged from .86 to .97, with mean of .91.

Ss received two scores on the peer rating scale: extrapunitive and intropunitive. The eight items comprising each of these traits were given weights of eight to one, according to their scale position as determined by the scalogram analysis. In this way, the more highly extrapunitive and intropunitive items were assigned heavier weights. To correct for the differences in the sizes of the groups, and consequently, the number of peer ratings per *S*, Cureton's (1957) procedure for normalizing, pooling, and correcting for unequal ratings per subject was followed. Thus, each *S* received an average score on each of the two traits, which represents the combined judgments of his peers.

Zimmer Sentence Completion Test

The 114 stems of this test (ZSCT) were designed to elicit responses relevant to specific variables. Thirty-six hostility items were scored as extrapunitive or intropunitive; 21 aggression anxiety items were scored as aggression anxiety or counterphobic; 6 items were scored both for hostility and aggression anxiety; 15 projection of hostility items were scored as projection or introjection; 36 dependency items were scored as dependent or independent. In addition, evasive and unclassifiable responses elicited by the stems were scored as neutral. The neutral category accounted for about 1% of all res-

ponses. The scoring was accomplished by looking up each response in a scoring manual (Zimmer, 1964) which lists most responses of about 1,000 Ss.³ The number of responses falling into each scoring category was tallied, with each response weighted as one point, except neutral responses which were counted as zero. Each *S* received a separate score on each major variable.

Results

One analysis was performed on 101 Ss chosen on an odd-even basis from the total body of 202 Ss. As a cross-validation procedure, the remaining 101 Ss underwent an identical analysis.

Reliability of Peer Ratings

The procedure for normalizing, pooling, and correcting unequal number of ratings per *S* was applied to the peer ratings. For the first 101 Ss, the reliability coefficients obtained by this method were +.85 ($p < .001$) for the extrapunitive scale, and +.91 ($p < .001$) for the intropunitive scale. These coefficients suggest that there is some consensus among Ss regarding the direction of hostility apparent in their peers. Interjudge reliabilities for the second group of 101 Ss were of a similar magnitude, +.87 ($p < .001$) for the extrapunitive scale, and +.90 ($p < .001$) for the intropunitive scale.

Reliability of ZSCT

For hostility items, product-moment correlations between two independent scorers for various *S* groups were +.98 ($p < .001$) for 45 Ss on all 42 items, +.95 ($p < .001$) and +.92 ($p < .001$) for 28 and 29 Ss, respectively. For the 36 depen-

³ Scoring manual, Zimmer Sentence Completion Test of Hostility, Dependency, Aggression Anxiety, and Projection of Hostility has been deposited with the American Documentation Institute. Order Document No. 10024 from ADI Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington, D. C. 20540. Remit in advance \$32.50 for photocopies or \$9.25 for 35mm microfilm and make checks payable to: Chief, Photoduplication Service, Library of Congress.

dependency items, the product-moment correlations between two independent scores for 25 Ss was $+0.90$ ($p < .001$). Odd-even reliability of all hostility items on a group of 101 Ss was found to be $+0.78$ ($p < .001$).

Correlations between ZSCT and Peer Ratings

Table 1 gives the correlation ratios between the four scales of the ZSCT and the peer ratings. Inasmuch as the regression of the first variable on the second differs from that of the second on the first, both were computed. Plots of the two variables show the relation between them to be nonlinear. The levels of significance indicated for the correlation ratios were determined by F tests.

Discussion

In an attempt to validate the Zimmer Sentence Completion Test against a peer rating scale, significant correlation ratios of .71 for hostility, .67 to .68 for aggression anxiety, and .63 to .69 for counterphobia variables were obtained. The projection of hostility and dependency variables yielded no significant correlations with the peer ratings. In contrast to other recently reported correlations on similar work (Fitzgerald, 1958; Zuckerman, Levitt and Lubin, 1961; Renner, Maher and Campbell, 1962), ranging from $+0.22$ to $+0.28$, the present results are encouraging. It is felt that the positive results found here are strongly contributed to by the nature of the ZSCT. The utilization of detailed and specific scoring standards empirically obtained, and the restricting of the number of behavior variables to be interpreted from each sentence stem are of prime importance.

The ZSCT is not especially designed for clinical use, e.g. diagnostics. It can be used to indicate approximate positions on a behavioral dimension. The best evidence of its usefulness is whether it serves its purpose in experiments. Evidence supporting its construct validity is given by

the Harsch and Zimmer study (1965), in which experimental intervention affected significant changes in the predicted direction on the hostility dimension.

Future research with the ZSCT will have to address itself more directly to the variables on dependency and projection of hostility.

References

- Cureton, E. E. Note on the scaling of ratings or rankings when the numbers per subject are unequal. *Psychometrika*, 1952, 17, 397-399.
- Fitzgerald, B. J. Some relationships among projective tests, interview and sociometric measures of dependent behavior. *Journal of Abnormal & Social Psychology*, 1958, 56, 199-203.
- Harsch, O. H. & Zimmer, H. An experimental approximation of thought reform. *Journal of Consulting Psychology*, 1965, 29, 475-479.
- Hiler, E. W. The sentence completion test as a predictor of continuation in psychotherapy. *Journal of Consulting Psychology*, 1959, 23, 544-549.
- Kingsley, L. A comparison of the sentence completion responses of psychopaths and prisoners. *Journal of Clinical Psychology*, 1961, 17, 183-185.
- Renner, K. E., Maher, B. A., & Campbell, D. T. The validity of a method for scoring sentence completion responses for anxiety, dependency and hostility. *Journal of Applied Psychology*, 1962, 46, 285-290.
- Veldman, D. J. & Worchel, P. Defensiveness and self-acceptance in the management of hostility. *Journal of Abnormal & Social Psychology*, 1961, 63, 319-325.
- Zimmer, H. Validity of sentence completion tests and human figure drawings. In Brower, D. & Abt, L. E. (Eds.) *Progress in clinical psychology*. New York: Grune & Stratton, 1956, 58-75.
- Zimmer, H. Scoring manual for a sentence completion test of hostility, dependency, aggression anxiety, and projection of hostility. (Second ed.) Athens, Georgia: University of Georgia, 1964, 248 pp.
- Zuckerman, M., Levitt, E. E., & Lubin, B. Concurrent and construct validity of direct and indirect measures of dependency. *Journal of Consulting Psychology*, 1961, 4, 316-323.
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Suicidal Configurations in the Bender-Gestalt

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Summary: Three clinicians experienced in the use of the Bender-Gestalt independently rated the presence-absence of ten signs relating to depression, hostility, dependency, emotional constriction, and rigidity in the protocols of 34 hospitalized mental patients, half of whom had made an unsuccessful suicidal attempt while the other half had not. Although the ratings of the three sets of judges were statistically reliable for seven of the ten signs, none of these indices distinguished between the groups as predicted. The value of the signs approach and the theory from which the predictions were derived seemed, within the limitations of the study, to be questionable. A counter-argument based on the notion of crisis was presented.

Problem

Although clinical psychologists use the Bender-Gestalt (B-G) signs approach rather extensively, empirical evidence bearing on the logic and validity of this usage lags far behind the instrument's popularity. One way in which the value of the B-G signs can be explored is by determining their sensitivity for differentiating between two groups known to vary on some psychologically important dimensions but are otherwise very similar. Phrased in the form of a question, the specific aim of the present investigation is this: Can clinicians, experienced in the use of the B-G, differentiate a group of subjects (Ss) who have at one time in the recent past attempted suicide (SA-group) from controls (C-group) who are otherwise matched on a number of relevant characteristics but who, according to psychological and psychiatric evaluations and reports from all sources including the Ss themselves, have never attempted suicide, or even considered such an idea? To the authors' knowledge, researchers who interested themselves in the area of suicide have never put the B-G to such use or explored its potentiality for throwing light on a problem of major importance. This study will, therefore, be of importance to both the student of suicide and of the B-G.

Five gross psychological characteristics have rather consistently been found associated with the so-called suicidal personality—especially among those who have actually attempted suicide: (a) depression; (b) repressed hostility directed against the self; (c) dependency conflicts; (d) emotional constriction; and (e) rigidity (Far-

berow, 1950; Farberow & Shneidman, 1955; Freud, 1925; Jackson, 1957; Kubie, 1964).

A survey of the B-G manuals and research literature (e.g. Bender, 1938; Hutt & Briskin, 1960; Tolor & Schulberg, 1963) suggested a number of indicators of the presence or absence of each of these five characteristics. The indicators were cast in the form of predictions to the effect that the SA-group would attain significantly higher ratings on the indicators than the C-group. The indicators of the five characteristics are these:

(a) Depression:

- (1) the tendency to flatten lines in Figure 6
- (2) a clockwise rotation of Figure A
- (3) a clockwise rotation of Figure 4

(b) Hostility:

- (1) a reversal of Figure 3
- (2) a rotation of Figure 3

(c) Dependency:

- (1) running together of Figure A
- (2) running together of Figure 4

(d) Emotional Constriction:

- (1) tendency to reduce figure size
- (2) the placement of Figure A in the extreme upper left-hand corner of the paper

(e) Rigidity:

- (1) rigid placement of the figures, one below the other

Method

Subjects

A search of the records of several thousand current or discharged in-patients admitted during the last ten years to the Fulton State Hospital, Fulton, Missouri,

yielded 17 Ss almost all classifiable as of upper-lower occupational status, who had made a definite suicidal attempt within six months before hospitalization, and whom it was possible to match fairly closely on a number of variables.

The specific data relative to these variables will be presented first for the suicidal attempt group, then, in parentheses, for the controls: *sex*: 8 males, 9 females (9 males, 8 females); *race*: 15 whites, 2 Negroes (17, 0); *marital status*: 7 single, 10 married, 0 divorced (5, 8, 4); *diagnosis*: personality pattern, trait disturbances or sociopathic personality 14, other entities 3 (14, 3); *median age*: 23 (23); *median IQ*: 96 (92); *median years of education*: 12 (10.5); *median months of hospitalization*: 13.5 (11).

All Ss had been administered the B-G within roughly three to five weeks from the date of hospitalization.

Procedure

The Bender protocols of the 34 Ss were coded for anonymity, and then randomly given to three clinical psychologists who had used the B-G projectively for at least five years. Each of the three clinicians was asked to independently rate the presence or absence of each of the ten signs (a-1 through e-1) on a 12-point continuum ranging from "definitely present" to "definitely absent." The judges were given a set of instructions to follow which contained definitions and illustrations of the ten signs. Once the judging was completed, the protocols were uncoded, inter-judge reliabilities computed and SA- and C-groups compared.

Results and Discussion

Product-moment correlations were computed for each of the ten signs for the three sets of judges. With the exception of signs a-2, a-3, and b-2, all correlations were significant at or beyond the .05 level; the reliable correlations ranged from .53 to .97. Sign b-2, rotation of Figure 3, was the least reliably judged; no two judges agreed on rating it. The ratings of only judges II and III attained the .05 statistical significance on sign a-3. The correlations between the ratings of the three sets of judges of sign a-2 were .77,

.39, and .60 for judges I and II, I and III, and II and III respectively; only the correlation of .39 falls short of statistical significance.

For the purpose of testing the predictions, the ratings of the three judges were averaged, and the means compared using *t* tests. None of the signs distinguished between the SA- and C-groups at the .05 or even the .10 level. The two groups were also compared on the mean ratings of the combined ten signs; again the scores did not differ significantly.

Other combinations were also attempted. For example, analyses were carried out on the seven signs which all three sets of judges rated reliably; also, comparisons were made for only those signs which were most reliably rated by the two judges who agreed most—as indicated by the highest "r" obtained when correlations for each set of judges were transformed into *z* scores, then averaged. In neither case did the SA- and C-groups differ significantly. With as many statistical operations as has been carried out, one would expect a few to attain significance by mere chance but this was not the case.

These thoroughly negative results are somewhat surprising. They can most parsimoniously be viewed as reflecting the failure of the Bender-Gestalt sign approach—at least insofar as the detection of suicidal tendencies is concerned—and/or the soundness of the theorizing from which the predictions were derived.

One might counter, on the other hand, that despite the care taken in matching the groups on several important demographic variables, they may not be discriminably different on the suicide-tendency dimensions studied. It may be recalled that the only psychologic variable on which the two groups were matched was the very gross psychiatric diagnostic classification; and even then there was much heterogeneity within each group.

The notion of crisis suggest another reason why the two groups did not differ on the suicide-tendency dimensions. If we assume that the suicidal attempts made by the SA-group were genuine rather than attention-seeking, it may be argued that a bona fide attempt marks the culmination of a crisis and crises are often quite thera-

peutic (Forer, 1963). Both Farberow (1950) and Rabin (1946) point out that attempting suicide may have an abreactive effect which produces measurable personality changes. The attempt and the subsequent hospitalization may have been instrumental in eliminating group differences on the psychological dimensions studied. Accordingly, the fact that the two groups did not differ with regard to the indicator variables of depression, hostility, dependency, emotional constriction, and rigidity would be, under these circumstances, of no discredit to the Bender or the current theorizing on suicide.

An equally strong case may be made favoring an interpretation which casts serious doubts on the adequacy of the Bender sign approach and the theoretical framework adopted in this study. Farberow and Shneidman (1955) report that three-fourths of their subjects who committed suicide had previously made a suicidal attempt. One may contend then that the abreactive or growth-oriented trend which may result from the crisis or the self-destructive attempt did not have more than transient effects on suicidal Ss. One may therefore be led to expect some essential differences between suicidal-attempt and no-attempt groups which the Bender did not, in this instance detect.

REFERENCES

- Bender, L. A visual-motor Gestalt test and its clinical use. *American Orthopsychiatry Association Research Monographs*, 1938, No. 3.
- Farberow, N. L. Personality patterns of suicidal mental hospital patients. *Genetic Psychology Monographs*, 1950, 42, 3-79.
- Farberow, N. L. & Shneidman, E. S. A study of attempted, threatened, and completed suicide. *Journal of Abnormal & Social Psychology*, 1955, 50, 230.
- Forer, B. R. The therapeutic value of crisis. *Psychological Report*, 1963, 13, 275-281.
- Freud, S. Mourning and melancholia. In *Collected Papers*, Vol. IV., London: Hogarth Press, 1925.
- Hutt, M. L. & Briskin, G. J. *The clinical use of the revised Bender-Gestalt test*. New York: Grune & Stratton, 1960.
- Jackson, D. D. Theories of suicide. In E. S. Shneidman & N. L. Farberow (Eds.), *Clues to suicide*. New York: McGraw-Hill, 1957.
- Kubie, L. Multiple determinants of suicidal efforts. *Journal of Nervous & Mental Disease*, 1964, 138, 3-8.
- Rabin, A. I. Homicide and attempted suicide: A Rorschach study. *American Journal of Orthopsychiatry*, 1946, 16, 516-524.
- Tolor, A. & Schulberg, H. *An evaluation of the Bender-Gestalt test*. Springfield, Illinois: Chas. Thomas, 1963.
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Design Reproduction With Motor Performance Held Constant

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Summary: A design reproduction task was constructed which practically eliminated the influence of motor processes. Significant differences in performance were obtained among *Ss* arranged along a pathological continuum. Results suggested that disorganized perception, with or without concomitant motor breakdown, is sufficient to explain faulty performance on perceptual-motor tasks.

Bender (1938) has indicated that perceptual, motor and integrative functions are all involved in the faulty design reproductions obtained from individuals with varying degrees of personality disorganization, particularly the organic. Some investigators have suggested that impaired perception is the hallmark of the brain damaged individual (e.g., Niebuhr & Cohen, 1956) while others have deprecated the role of perception in favor of the "output" or motor processes (Stoer, Corrotto & Curnutt, 1965). The present study further investigates this question by holding motor performance constant (or minimal) while still requiring subjects to reproduce designs which are presented visually.

Method

Four groups of 30 *Ss* each were used in this study: normal college students (*N*); functionally disturbed patients (*F*); retardates without organicity (*R*); and retardates with organicity (*O*). These groups were selected to comprise an approximate continuum of perceptual disorganization as described by Saucer and Deabler (1956). All *Ss* were caucasian. There were 15 males and 15 females in each group and *Ss* were individually matched on sex and age (within ± 5 years). Means and *S.D.s* on age for the group were: *N*, $\bar{x} = 23.2$, *S.D.* = 8.1; *F*, $\bar{x} = 23.7$, *S.D.* = 8.2; *R*, $\bar{x} = 23.9$, *S.D.* = 8.8; *O*, $\bar{x} = 23.9$, *S.D.* = 8.6. The *Ns* were volunteers from a General Psychology lecture class. The *Rs* and *Os* were obtained from the Lincoln State School in Illinois, a custodial facility.¹ The *Fs* were emotionally disturbed in-patients at the Summit County Receiving Hospital including 13

schizophrenics, 1 manic-depressive, 1 psychotic depression, 6 personality disturbances, 6 psychoneurotics and 3 transient adjustment reactions.

A new instrument, the Design Reproduction Test (DRT) was specifically constructed for this experiment by the senior author with the help of a graphic arts firm. The "test" consisted of a one foot square board with a two inch square aperture in the center. The board is about $\frac{3}{4}$ " in thickness and two clear plastic strips with opaque geometrical designs can be inserted both vertically and horizontally through appropriate slots. The slides move along concealed tracks in such a manner that they overlap at the center of the board, directly beneath the aperture, causing constantly changing designs to appear as the strips are moved back and forth. The *S* has only to push the strips up and down along fixed grooves — there are no other motor requirements. Four sets of slides were used. For each set, three photographs were taken of designs appearing in the aperture at different slide positions. These photographs were then transferred to cards (12 cards in all) and the *S's* task was to reproduce the picture presented on the card by simply moving the slides until the correct design appeared in the aperture. There were no time limits and, since manual dexterity, coordination, hand pressure, etc. played no role in the final product, perceptual rather than motor functions were tapped.

Each slide was calibrated along the edge with printer's units numbered consecutively from 1 to 127. While these numbers could not be observed in the viewing aperture they were visible to the examiner through two tiny openings in the board so that an exact and objective reading of the *S's* performance could be

¹ Appreciation is expressed to Mary Capotosto for testing these subjects.

obtained. The designs were arranged along a continuum of increasing size, curvature and angularity and the correct positions corresponding to the stimulus cards (and associated numbers) were, of course, determined when the designs were originally photographed. The S's "error score" was simply the sum of all the deviations from those points which indicated exact reproductions (disregarding signs). With twelve cards and two slides per card there were a total of 24 possible deviation scores.

Administration was simple and straightforward. The examiner gave the following directions: "*These two slides when moved back and forth make different pictures in this opening*" (*Examiner moves slides and calls S's attention to the changing designs in the aperture*). "*All I want you to do is to make the same design or picture in this opening that is on this card.*"

If the S failed to understand the instructions, they were repeated once verbatim. If the S still failed to understand the nature of the task the instructions were reworded to conform to the S's questions and vocabulary level. When Ss asked if there were time limits, they were told that there were none and that they were to take their time. When the S was satisfied with his response his two slide scores were recorded. This procedure was followed for all designs. The absolute differences between observed and expected (correct) scores were tabulated and totalled and the composite difference score for all the slides constituted the S's final measured performance.

Results and Discussion

The split-half estimate of test reliability

was #.94. The r between total score on the DRT and the four-point diagnostic continuum (organicity-retardation-functional pathology-normalcy) was $.84 \pm .03$. While mean scores for each group varied along the diagnostic continuum in the expected direction, inspection of the data indicated that maximum differentiation would have been obtained if the N and F groups were combined and the O and R groups were combined. In this case, an a posteriori cut off score of 300 would have produced a highly efficient differentiation between the two composite groups, misclassifying only 1N, 1F and 2 Rs and yielding a Phi of .95 ($p < .001$).

Results suggest that disturbances in motor functioning, while they may well be present, do not constitute a necessary condition for the faulty design reproductions produced by pathological groups, particularly the retarded and organic.

REFERENCES

- Bender, Lauretta M. A visual motor gestalt test and its clinical use. *American Orthopsychiatric Association Research Monographs*, 1938, No. 3.
- Niebuhr, H., Jr. & Cohen, D. The effect of psychopathology on visual discrimination. *Journal of Abnormal & Social Psychology*, 1956, 53, 173-177.
- Saucer, R. T. & Deabler, H. L. Perception of apparent motion in organics and schizophrenics. *Journal of Consulting Psychology*, 1956, 20, 385-389.
- Stoer, L., Corotto, L. W. & Curnutt, R. H. The role of visual perception in the reproduction of Bender-Gestalt designs. *Journal of Projective Techniques & Personality Assessment*, 1965, 29, 473-478.

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Examiner Sex and Sexual Differentiation In Preschool Children's Figure Drawings

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Summary: The figure drawings of 939 disadvantaged preschool children were examined for observable sexual differentiation. There were no significant boy-girl differences in the proportion of same sex figures (about 16%) obtained by male examiners; however, 44% of the older girls but only 18% of the older boys tested by females drew same sex figures.

Effects of examiner characteristics on subject behavior have been demonstrated for a variety of measures. In studies of sex role development, examiner sex would seem to be a salient characteristic; its relation to Draw-A-Person (DAP) performance has not been considered, however, in the literature on children's drawings, despite the interest that has been shown in using the DAP as a measure of the development of sexual identity.

In this study we report on the association of examiner sex and (a) the presence of sexual differentiation as judged from observable criteria and (b) the proportion of male and female figures drawn by preschool boys and girls.

Method

Subjects

The DAP was administered to a sample of 947 children as part of a nationwide survey of full-year Head Start programs. Identified as culturally deprived, the children ranged from 3-0 to 6-11 years. Each child was tested individually by a college graduate with a major in one of the social sciences who was given additional training in the administration of tests to younger children. There were 12 female and 6 male examiners.²

Procedure

Each child was instructed to draw a picture of a person. The child was not asked to identify his figure; however, spontaneous verbalizations were recorded.

Eight drawings were excluded from the analysis as more than one figure was offered, leaving a total of 939 drawings, 487 done by boys and 452 by girls. (For a more detailed description of sampling and testing procedures, see Commins, Cort, Henderson, & O'Keefe, 1967.)

In their work on the sexual differentiation of human figure drawings, Swenson (1955) and Weider and Noller (1950) defined adequacy of differentiation in terms of hair length, sex appropriate costume and jewelry, and body contour. Adopting their first two criteria as appropriate for this sample, we scored the drawings in the following ways: (a) a stringently differentiated figure was defined as one with at least two sex appropriate characteristics, such as short hair and trousers for a man and long hair or styled hair and a skirt for a woman; (b) a leniently differentiated figure was defined as having one sex appropriate characteristic; (c) a recognizable human figure, lacking sex appropriate characteristics of any kind was defined as undifferentiated; and (d) a drawing with no discernible form was classified as unrecognizable. The reliability of judgments using this six category system was tested by comparison of the identifications made by two judges (the authors) working independently. All but one (a female stringent/lenient disparity) of a sample of 50 drawings were classified in the same way by the judges. After reliability had been established in this sample, the remainder of the drawings were judged by the junior author.

Results and Discussion

So few (9%) of the figures were stringently differentiated that the lenient and stringent categories were pooled for most analyses: 24% of all drawings were judged

¹ This study utilized data collected for the Office of Economic Opportunity under contract OEO-1308, 1966 by the Planning Research Corporation.

² About half of the children were Negro; most of the examiners were white. Data are not available, however, that would permit analyses by child and examiner ethnic group.

to be differentiated, 50% were judged undifferentiated, and 26% were judged unrecognizable. These latter two categories were also pooled for most analyses. Undifferentiated drawings were offered more frequently than were differentiated drawings at all ages, although the increase in the proportion of differentiated drawings from 1% at age 3 to 46% to age 6 was statistically reliable ($\chi^2 = 77.8$, $df = 4$, $p < .001$). Girls drew differentiated figures more frequently than did boys ($\chi^2 = 22.0$, $df = 1$, $p < .001$); they also drew more stringently differentiated figures ($\chi^2 = 11.9$, $df = 1$, $p < .01$). Same sex figures tended to be offered more frequently than opposite sex figures by all age and sex subgroups, although only among older girls (5-0 to 6-11 months) was this tendency substantial, amounting to a more than 20% difference in the same-opposite categories.

Evidence for the development of "sexual identification" as measured by the DAP thus was found only among girls, for whom the proportion of undifferentiated figures decreased with age while

the proportion of same sex figures increased and the proportion of opposite sex figures remained about the same. For boys, there was no reliable tendency for the proportion of same sex figures to increase more with age than did the proportion of opposite sex figures.

As shown in Table 1, however, this apparent earlier development of sexual identification in girls is dependent on the sex of the examiner: (a) 44% of the older girls but only 18% of the older boys tested by same sex examiners offered same sex drawings ($\chi^2 = 14.9$, $df = 2$, $p < .01$); (b) the proportions were not reliably different for older boys (12% same sex) and older girls (16% same sex) tested by opposite sex examiners while (c) the proportions of undifferentiated, same, and opposite sex drawings offered by younger children were not reliably associated with either child or examiner sex. Had the examiners all been males, it would have appeared that the increase in opposite sex drawings was about the same as the increase in like sex drawings and that these increases were as great for boys as for girls.

Table 1
Percent of Undifferentiated, Same Sex, and Opposite Sex Drawings
by Child Age and Sex and by Sex of the Examiner

	Percent of Drawings			
	Younger Children (3-0 to 4-11)		Older Children (5-0 to 6-11)	
	Boys	Girls	Boys	Girls
Same sex examiner				
Undifferentiated drawings	92%	81%	72%	48%
Same sex drawings	04	13	18	44
Opposite sex drawings	04	06	10	08
N	52	190	74	156
Opposite sex examiners				
Undifferentiated drawings	88%	89%	75%	74%
Same sex drawings	08	08	12	16
Opposite sex drawings	04	02	13	10
N	195	37	166	69

In interpreting these results, it seems reasonable to assume that at this age (5-0 to 6-11) a stable, internalized sexual identity is not yet developed so that the children were dependent on cues and "models." The capacity to recognize and respond to sex related stimulus characteristics may be a component of identification which is demonstrated in the presence of appropriate cues but which is not sufficiently internalized to be evoked by an opposite sex examiner. That older boys did not demonstrate this ability may indicate a later development of the modeling component; it may be related, however, to the nature of the sample. The Head Start program offers its services to children from very low income families. Such families may be assumed to include a higher proportion of father absent, mother dominant families. Women in such families may provide a stronger reinforcement for imitation to girls than men offer to boys (Hetherington, 1966). The older boys may thus have developed a greater capacity to incorporate sexually appropriate characteristics of a model in their drawings than they demonstrated in the male examiner testing situation. It is also possible that (a) only among children from father present-father dominant backgrounds, would boys tested by male examiners offer as high a proportion of same sex figures as girls tested by female examiners, or (b) the older boys had not developed sufficient psychomotor skills to draw the differentiations of which they were aware.

One implication of our findings is that evaluations of psychosexual development based on children's drawings should take into consideration both examiner sex and age-typical responses. A second implication relates to interpreting DAP scores for young boys. Aspects of the drawings presumably related to sexual identification (clothing, hair, secondary sexual characteristics) enter into the scoring of the DAP as a measure of intelligence. To the

extent that sex-related items typically contribute to DAP performance it seems possible that examiner sex may be associated with the higher DAP scores reported for girls than for boys (Anastasi & D'Angelo, 1952; Bowers & Giles, 1966).

Further research is needed on the interaction of factors such as examiner and child sex with measures of the development of sexual identification. It is clear, however, that generalizations on this topic based on figure drawing data for young children must be made cautiously and only with stringent controls placed on data collection.

REFERENCES

- Anastasi, A., & D'Angelo, R. A comparison of Negro and white preschool children in language development and Goodenough Draw-A-Man IQ. *Journal of Genetic Psychology*, 1952, 81, 147-165.
- Bowers, N. D. & Giles, G. C. Social class, sex and age differences in sex role identity as inferred from children's drawings of men and women. Paper presented at American Psychological Association Convention, 1966.
- Commins, W. D., Cort, H. R., Henderson, N. H., & O'Keefe, R. A. *A Study of the 1966 Full-Year Head Start Programs*. Washington, D. C.: Planning Research Corporation, Report D1268, 1967. (Preliminary Report for the Office of Economic Opportunity under Contract OEO-1308.)
- Hetherington, E. A developmental study of the effects of sex of the dominant parent on sex-role preference, identification and imitation in children. *Journal of Personality and Social Psychology*, 1966, 41, 187-191.
- Swenson, C. Sexual differentiation in the Draw-A-Person test. *Journal of Clinical Psychology*, 1955, 11, 37-41.
- Weider, A., & Noller, P. Objective studies of children's drawings of human figures: I. Self awareness and socioeconomic level. *Journal of Clinical Psychology*, 1950, 6, 319-325.
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P.A. News & Notes

At our last Board meeting I mentioned to our editor that we needed some sort of PA information exchange. Being the liberal, innovative, dedicated and punctual individual he is, he immediately replied, "O.K., write it up!" So—here's my CRY FOR HELP. Got any PA bibliographies, normative data, unusual test protocols, new tests you are working on, etc., etc., you'd like to share with members of the SPT? If so, please send them to me as soon as possible.

Leonard Handler (Psychology Dept., U. of Tennessee, Knoxville, Tenn., 37916) is doing research relating autonomic measures to psychological tests (MMPI, BG, DAP) and predicting aggressive behavior in children from the BG. He would like to hear from anyone who is or has been doing similar work.

Sidney Jordan (102 Professional Bldg., Parkwood and Monroe St., Toledo, Ohio, 43624) is preparing a study on a nine year old girl who vomits blood at will. The study involves giving a battery of tests to the girl, her parents, and siblings. Another study involves three different Rorschach administrations to a girl who was sent to a school for the emotionally disturbed. The first Rorschach was administered before she came to the school, the second one when she began to show "bizarre" behavior while at the school and just before she ran away, and a third one a month after the second. "On the second Rorschach she kept 17 responses from the free association stage of test administration, rejected 9 of her first responses and added 5 new ones during the inquiry. The third Rorschach is markedly different from the first and somewhat varied from the second." Sidney is interested in any references where the degree of fluidity found in these data and its implications on treatment have been discussed. He is

also interested in reference material to studies employing PTs on entire family constellations and on groups that consider themselves mystics (surely some of you can help him with information on mystics, hippies, etc.)

Raymond Fowler (Chairman, Dept. of Psychology, University of Alabama, University, Ala., 35486) has developed a method for computerized interpretation of the MMPI which is now in use nationwide. The computer utilizes an extensive set of interpretative rules to produce a three-page print out which includes scores, a profile, a listing of "critical items" and a one-page narrative report which reads much like reports prepared in the usual manner. The service, which is available to qualified clinical psychologists and psychiatrists, is sponsored by the Roche Psychiatric Service Institute, Nutley, N. J. I have been following Ray's work on this program for several years and must say he has done an outstanding job.

Earl S. Taulbee & David E. Stenmark have developed an Individual Scoring Blank and Profile Sheet for both the Factor Analytic and Dimensional Scoring systems for the Blacky Pictures Test. They have a few copies left of the *Annotated and Indexed Bibliography (1949-1967)* which they will send to those requesting them. Thanks to Al Rabin and others who sent references to make the bibliography more complete and up-to-date.

Please send to me at the address below any information you wish to have passed along.

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The Metamorphosis of Projective Methods¹

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Summary: Early approaches to projective methods emphasized the use of unstructured materials as stimuli designed to elicit symbolic material within a psychoanalytic framework. Current theorizing concerning projective methods emphasizes the multi-level nature of test behavior and the unique role that projective methods play in the assessment armamentarium.

When projective techniques were first popularized in the United States in the late 1930s they received a very mixed reception. Those American practitioners who had been trained in the psychometric tradition were extremely ill at ease with techniques that seemed to demand so much in the way of clinical judgment and qualitative appraisal. Even the so-called 'scores' used in connection with the Rorschach apparently lacked psychometric reliability and other desirable characteristics.

On the other hand, projective methods were warmly welcomed by those American psychologists who were more psychoanalytically oriented. This was because personality assessment, from a psychoanalytic point of view, emphasized the 'basic' personality. Basic herein implies a focus upon factors of which the subject was not consciously aware. Early advocates of the projective approach described their techniques as x-rays of the personality and imputed a sort of magical quality to them which would enable the assessor to detect the 'true' characteristics of the individual in spite of any attempt on the part of the subject taking the test to bring ego-defenses into play in an effort to deceive the examiner. Early research on the Rorschach, such as that of Fosberg (1938) seemed to lend some credence to this assumption.

Since that time a vast literature concerning the validity and predictive efficiency of projective techniques has grown up in the United States. Regrettably, much of this has been partially or totally

ignored in the European literature. In many of the German journals, for example, a kind of polarization is described in which there are the *good* guys and the *bad* guys. The good guys are psychoanalytically oriented, use subjective methods of appraisal, deplore the use of probability statistics, and espouse the ideographic approach to personality assessment. The bad guys, on the other hand, use objective and empirical methods, couch their findings in quantitative terms, and tend to favor the nomothetic approach. Within this kind of polarized dichotomy, much of the research conducted by American psychologists on projective methods has been written off as irrelevant, inappropriate, and worthless.

However, in the viewpoint of the present writer, projective techniques do not have to be regarded either as a shibboleth to be refuted or defended, or a panacea which will enable the diagnostician to put aside all other tools. Rather, they are a necessary, but not sufficient means for understanding both the individual personality and the characteristics of groups. As the profession has gone forward in its increasing sophistication regarding projective methods, the latter have been more clearly defined on a continuum in terms of what they measure. Tests with a good deal of structure, like sentence completion methods, for example, seem to depend for their value mainly upon the cooperation of the subject taking the test. They can be interpreted simply as structured interviews, requiring the subject to answer questions just as he would if he were asked directly; or, the subject can assume a more spontaneous stance and thus reveal aspects of his personality of which he may not be consciously aware. Tests of the thematic variety, as graphically documented in a book by Murstein

¹ Based in part upon a paper presented to the International Congress of Rorschach and Other Projective Techniques on August 5, 1968 in London, United Kingdom.

(1963), are not clearly related to material of which the subject taking the test is unaware. Rather, the material obtained by means of the Thematic Apperception Test (TAT) is, as Leary (1957) termed it, 'pre-conscious,' or privately symbolized. Leary has postulated a level which he calls the "unexpressed unconscious" which deals with needs the individual may possess, but which are not expressed in projective tests. Thus, there is suggested the possibility that even the expression of a psychological need on a projective test may imply a certain readiness on the part of the person being tested to bring the need close enough to awareness so as to be able to verbalize it and communicate it to the examiner administering the test.

Another important kind of research which has bearing on our theoretical model is that kind which deals with the stimulus properties of the test itself. For example, Klopfer and Borstelmann (1950) in regards to the Szondi Test; Suczek and Klopfer (1952) in regards to the Bender-Gestalt; and Baughman (1959) in connection with the Rorschach, have all demonstrated quite convincingly that the results of projective tests are not only a function of the subject taking the test and what he projects into the situation, but also a function of the test itself and its stimulus-demand properties. A recent tendency on the part of persons investigating the Rorschach Test, has been to investigate both the cards and selected responses by means of the semantic differential method developed by Osgood, Suci, and Tannenbaum (1957).

Indeed it would appear that projective tests, having lost their apparently magical potentialities for revealing all important aspects of the personality, are becoming sufficiently differentiated from each other so that specific aspects of the personality can be illuminated as the psychologist desires it. There are, of course, those psychologists, especially in the U.S. whose system of assessment and psychotherapy completely obviates the necessity for utilizing projective methods. Included in this group are the enthusiasts of behavioral modification as a means of adjusting people with emotional problems. Since their method seeks only to identify the

symptoms that the individual consciously would like to have eradicated, they are not interested in causes, and any attempt to probe more deeply into the personality is obviously not necessary. Thus, the behavioral modifiers can get along without projective techniques. Another group of practitioners who can do without them are the client-centered psychologists who do all of their counseling without regard for either the patient's past or the aspects of his motivation of which he himself is unaware. Within this frame of reference, any knowledge of the patient which the patient does not himself freely and consciously render to the therapist, becomes undesired and undesirable. Still a third group of practitioners who do not require projective techniques as part of their armamentarium, are those psychoanalysts who are so convinced of the universality of dynamics as described in the early literature that they fail to see the need for any individual evaluation of personality. Thus, if one were to be convinced that all people with marital problems have unresolved Oedipal complexes, that all persons with paranoid schizophrenia have latent homosexuality, etc., there would be little need to determine the truth or falsity of these hypotheses, as they would be, rather, certainties. Thus, it can be seen that projective techniques can be cast aside on many pretexts. Of course, the same individuals as described above who would relinquish the need for projective methods might also very well be able to do without objective methods of personality assessment, interviews with family members, or other aspects of the diagnostic process.

Thus it appears that the individual who is left with the need for projective techniques is the clinical psychologist, who really experiences an intense need to understand each individual who comes across his professional path as an entirely new problem in evaluation. He would probably want to know something about his public image, as determined from his way of influencing those around him, and from his personal and work history. He would also want to know on what bases the individual made cognitive judgments about himself as gleaned from interviews or other sources of self-report; and he would cer-

tainly not want to ignore the individual's motivations insofar as he was barely or not at all aware of them. Thus, projective techniques become identified as the major source of information concerning this last aspect of the assessment approach. In a recent survey of the research literature on the Rorschach Test conducted by the present writer (Klopfer, 1968), it was discovered that the content of the test seemed to lend itself more readily to predicting observable behavior, than other aspects such as formal scoring. Perhaps this is because the personality areas that were of interest to Rorschach and Jung are no longer part of the concern of the clinical psychologist engaged in the assessment procedure. The kind of typologizing which characterized the early part of the century was related to the atmosphere of somatotyping and pigeon-holing which was typical of that era. There was much faith in the proposition that once a few objectively verifiable facts could be determined about a given individual, that all else would follow, and that predictions concerning other areas of functioning could be made with great accuracy. Perhaps the reason that Rorschach content is gaining impetus as a predictive device is because we are now trying to predict what the individual will do and say and not whether he will be identified as a member of a certain class or type on the basis of some other test procedure. Thus the matter of predictive efficiency is more highly valued today as a criterion of validity than is the concurrence of one test interpretation with another.

In conclusion, the theorist of today considers a projective test as a stimulus with known properties, which interacts with a perceiving subject, and produces certain verbal or graphic results. As far as projective test behavior has known correlations with other kinds of behavior, it is possible to save time and effort by predicting from one situation to another. Furthermore, the projective test situation since the individual is unable to control his responses consciously, is more likely to reveal aspects of functioning which are

socially undesirable, and possibly ego-alien. However, projective test behavior cannot be considered as revealing the entire personality in view of the absence of any adequate evidence that either conscious self-report or observable behavior measures the same level of personality functioning. Rather, the projective test has now become one of the important elements of an assessment procedure, rather than either a trivial one or the sole one of significance; thus, the psychologist utilizing the projective test is like one of the three blind men who is viewing the elephant: when he puts his material together with the rest, he might be able to estimate the nature of the beast and give it a name. With this new realistic frame of reference, projective techniques have developed a new following and a new surge of interest in their use.

REFERENCES

- Baughman, E. E. An experimental analysis of the relationship between stimulus structure and behavior on the Rorschach. *Journal of Projective Techniques*, 1959, 23, 134-183.
- Fosberg, I. A. Rorschach reactions under varied instructions. *Rorschach Research Exchange*, 1938, 3, 12-30.
- Klopfer, W. G. Current status of the Rorschach Test. In McReynolds, P. (Ed.) *Advances in psychological assessment, Vol. I*. Palo Alto: Science and Behavior Books, Inc., 1968.
- Klopfer, W. G. & Borstelmann, L. J. The associative valences of the Szondi pictures. *Journal of Personality*, 1950, 19, 23-29.
- Leary, T. F. *The interpersonal diagnosis of personality*. New York: Ronald Press, 1957.
- Murstein, B. I. *Theory and research in projective techniques*. New York: John Wiley & Sons, 1963.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. *The measurement of meaning*. Urbana: The University of Illinois Press, 1957.
- Suczek, R. F. & Klopfer, W. G. Interpretation of the Bender-Gestalt: Associative value of the figures. *Journal of Orthopsychiatry*, 1952, 12, 33-37.

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Symposium: The Children's Apperception Test: Its Use in Developmental Assessments of Normal Children¹

Introduction

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One of the initial goals in the development of projective techniques was the hope that they would serve as an aid in the assessment of emotional disturbance. It soon became apparent that before we can define a *deviant* response, we need to establish some baselines from normative data. Consequently, the earliest efforts at the study of normal children were not so much concerned with deriving personality descriptions as in counting "common" responses. When we inspect the resulting normative tables, we find not much more than descriptions of the pictorial details and portrayed activities as they appear on the stimulus cards. Fortunately, none of the papers in the present symposium falls in that category. Neither are any of the papers concerned with the time-worn controversy over the relative merits of animal versus human figures, but rather with the responses of normal young children to the given set of animal cards.

Certainly, when looking at normal children's protocols, it is redundant to say that we would not expect to find as many deviant and bizarre responses as in the protocols of disturbed children. But more important, in terms of the personality evaluation of normal children, we are concerned with the assessment of ego functions — their presence, development, and strength — rather than with evidences of their weakness, deviation or absence. Although in some respects a more difficult task, this is the approach taken in each of the following papers.

For an overview of the presentations in

the symposium, the first paper, by Dr. Witherspoon, discusses the development of objective scoring methods for use in the study of longitudinal data. He was one of the first investigators to carry out normative studies with the CAT which did use psychodynamic variables rather than purely descriptive counts. He is presently reporting on methods for scoring behavioral and personality characteristics as revealed in the test protocols.

Dr. Moriarty presents material gathered as part of the Coping Project of the Menninger Foundation under the direction of Dr. Lois Murphy. Their basic interest has been in the uniqueness of each record rather than in descriptions of symptoms or classification into normative tables. Longitudinal studies of the progress of individual children are emphasized. The interest is in *how* the child responds in the test situation, *why* particular responses or reactions are elicited, and *what* these indicate, both presently and predictively.

The final paper, by Dr. Rabin, makes comparisons between two differing socio-cultural groups, in a further extension of his investigations with children raised in the Kibbutz. His present paper is the first report of CAT data from the Kibbutz studies.

The discussant for the papers presented in the symposium is Dr. Leopold Bellak, the originator of the Children's Apperception Test.

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¹ Presented jointly by the Society for Projective Techniques & Personality Assessment, Inc. and Division 7 at the Annual Meeting of the American Psychological Association, Washington, D.C., September, 1967.

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Development of Objective Scoring Methods for Longitudinal CAT Data

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The purpose of this research was to investigate the types of responses given by children from three to ten years of age to the pictures of the Children's Apperception Test, hereafter referred to as the CAT. The CAT, a picture story projective technique developed by Bellak and Bellak (1950), consists of 10 black and white pictures showing animals in various situations and designed to be used with children of both sexes between the ages of three and ten. The CAT is a projective method, or as the authors of the test prefer to call it, an apperceptive method (Bellak, 1954), designed to assist in the investigation of personality development by studying the dynamic meaningfulness of the individual differences in perception of standard stimuli. As with all other projective media, objective scoring and analysis become a critical concern. Through the years, Witherspoon and his students have been searching for objective and meaningful ways to interpret CAT data.

Frequencies and relative intensities of responses to each animal picture of the CAT by normal middle-class children in the preschool years were reported in *Child Development* by Byrd and Witherspoon in 1954. Ss were 38 boys and 42 girls ranging in age from two years eight months to six years five months. These 80 protocols represented the first administration of a ten-year longitudinal study. Ten years later, Stith and Witherspoon (unpublished at this date) rescored the original 80 protocols using the same method. Stories were coded for orality, animality, sibling rivalry, Oedipal conflict, aggression, fear, sexuality and identification with father and mother. There was a 94% agreement, numerically, with the original scoring, indicating a high degree of objectivity for the scoring method. Two hundred and sixty-eight protocols of the same Ss were then scored and analyzed by age level, ages three through eleven. The following conclusions would seem warranted:

1. Responses to the CAT are largely apperceptive in nature. The frequency of non-apperceptive responses decreases with age and are minimal by age eight.
2. Sex differences in the nature of the responses, with the possible exception at ages three and four, are virtually nonexistent.
3. When judged by frequency and intensity, the dynamics of parental identification, aggression, and orality seem to be best explored by the CAT, while responses dealing with fears, sibling rivalry, the Oedipal situation, toileting, cleanliness, and sexuality are elicited very infrequently.

These longitudinal findings are in complete accord with the cross-sectional findings reported earlier. The results, however, do provide normative data for the ages indicated. An analysis of the responses by individual stimulus cards revealed that all cards, except card 9, elicited a significant number of responses scored as orality, aggression, identification with mother, identification with father, and acceptance by adults. Card 5 was the only one eliciting a significant number of Oedipal responses. This analysis was based on 4,598 responses.

In an attempt to test the effectiveness of the CAT as an instrument for revealing personality dynamics from a psychoanalytic point of view, Rosenblatt (1958) examined 400 response stories of 36 children in the phallic phase (ages three to six) and in the latency period (ages six through ten). An analysis technique was devised utilizing an empirical categorization of responses into nine major categories which were further sub-divided into 36 minor categories. While no uniform age trends could be discerned, phallic age children indicated less interaction with threatening figures and usually omitted the character exposed to the danger. Children in the latency period indicated more cooperative activities between family

members and more independence functions. The mother was often seen by both sexes as an authority, a provider, or a punitive agent. Oral themes prevailed throughout, including the latency period, as did identification of both sexes with the mother. Contrary to expectations, there were no clearcut sex differences at any age level. Statistically significant differences when found tended to be more a function of a particular card's stimulus value than of age or sex. Rosenblatt has provided a comprehensive scoring manual with corresponding normative response patterns by age and sex.

Nolan (1959) applied the techniques used by Heyns, Verloff, and Atkinson, (1958) in scoring TAT protocols. His purpose was to determine whether the use of their method could be applied to longitudinal CAT responses as indicators of the motives of affiliation, achievement, and power and to determine whether they are relatively stable indices over an extended period of time. He hypothesized that with successive increases in chronological age there would be a concomitant increase in strength of the three motives. He also expected, on the basis of other developmental research, that girls would show a more advanced pattern of each motive at any age level than boys of the corresponding ages. It is interesting to note that, as in earlier analyses, the stimulus value of certain cards was much greater than that of the other cards. Sixty-five percent of the responses classed as achievement were elicited by Card 2 (one bear pulling a rope on one side while another bear and a baby bear pull on the other side). Cards 3, 5, 8 and 9 contributed 72.5% of the Affiliation responses, with 35.9% elicited by Card 8 (Two adult monkeys sitting on a sofa drinking from tea cups. One adult monkey in foreground sitting on a hassock and talking to a baby monkey). The power motive was the only one to elicit three or more responses from all 10 cards. However, Card 10 (A baby dog lying across the knees of an adult dog, both figures with a minimum of expressive features. The figures are set in the foreground of a bathroom) produced 42.3% of the power motive responses. Cards 1, 6, and 7 con-

tributed very little to any of the three motives.

Nolan was able to demonstrate that the TAT scoring method of Atkinson et al. could be used with CAT response stories and that the motives of achievement, affiliation and power are present in the responses of young children. Over-all age trends were as predicted, with statistically significant change occurring by age 8-10 for the achievement and affiliation motives and by age 6-10 for the power motive. Sex differences, however, were not present as predicted.

Currently Snellgrove and Nieves are exploring a different approach to scoring CAT responses. Studies have been appearing for over 30 years (Shirley, 1933; Neilson, 1948; Escalona, 1963; Escalona and Heider, 1959; Skard, Inhelder, Noelling, Murphy, & Thomas, 1960; Stott, 1962; and Digman, 1963) which tend to indicate that child personality development is consistent. Specifically, these studies have been concerned with "traits" of temperament, personality, or behavior. The problem that immediately arises is the traditional association of certain traits with particular schools of thought. In the case of CAT data, the psychoanalytic interpretation was suggested in the assumptions on which the test was developed. It is often felt by psychologists that psychoanalytic personality terms are generally somewhat nebulous, highly connotative, and restricted to a particular point of view, not shared by all. It was, therefore, the purpose of this research to develop more universal terms which would account for standard elements of personality.

The initial question of how the CAT data could be handled was indeed a formidable one. The fallacy in this type of projective testing seemed to be the tendency to move by inference, away from the observed behavior toward higher levels of abstraction. Thus, the discussion of a child's personality has little correspondence to his actual behavior. In order to avoid this pitfall, the CAT as an indicator of personality was re-examined and reduced in scope to its most objective form. The following assumptions were made:

1. The CAT is a standard stimulus situation in the presence of which the individual emits verbal behavior, which is consistent with his total behavior.
2. This verbal behavior is an indicator of personality.
3. Personality is a generic term that signifies the individual's total predisposition to behave in a certain manner under specified conditions; i.e., what an individual's behavior is, has been, or will be like.

It was then decided to consider the CAT protocols as typed records of verbal behavior which might be classified into categories on the basis of content.

It was the conviction of the researchers that the most fruitful approach to the development of a new CAT scoring system was the use of categories that had been identified by factor analytic studies of behavioral data. Studies by Stott (1962) and Digman (1963) identified prominent factors of child behavior. The studies by Cattell (1950) served as a guideline. In addition, various miscellaneous sources of information which were available through the Institute of Human Development at Florida State University were utilized. All of the information thus obtained yielded a list of tentative factors which seem to underly patterns of behavior. From this list, a workable set of basic factors was selected based largely on the following criteria:

1. They could be appropriately named and described for use with the CAT.
2. They are derived from and in agreement with factor analytic studies.
3. They are suited for the type of responses typically given to CAT cards.

Eleven factors were originally selected and appropriately labeled as scoring categories. Two categories were soon eliminated because of difficulty in definition. These categories were Introversion-Extraversion and Independence. The nine remaining categories were used to score representative CAT protocols. A second revision deleted four categories; Sophistication, Autia, Socialization, and Family Relationships. The five remaining categories were revised and four new categories added.

It is hoped that this new application of content analysis will provide an objective method of interpreting CAT results which will be useful in furthering the understanding of personality development in children. The nine scoring categories currently under study are:

1. *Schizothymia*: Behavior that is to some degree anti-social, aggressive, hostile, socially undesirable or punishing. This may be determined by:
 - a. the context in which it occurs.
 - b. the nature of the behavior per se.
2. *Emotionality*: Behavior that reflects the degree and type of affective involvement—emotional behavior.
3. *Character-Integrity*: The behavioral reflections of interval standards such as moral soundness, self-discipline and personal responsibility.
4. *Basic Needs*: Specific reference to physiological-developmental behaviors or states of the organism which are associated with growth or vital processes. This includes: sleeping, eating, drinking, washing, living, playing, housing, etc.
5. *Sex Role*: The identification of a story character as a boy or man (he, him), girl or woman (she, her), insofar as the response contains at least one of the above, or similar nouns—any response which denotes gender or sex role (exclude animal gender).
6. *Activity*: Any specific reference to movement or ongoing behavior, including verbal behavior.
7. *Description*: Responses which merely list, name, enumerate or describe elements of the picture card.
8. *Self-reference*: Responses in which the pronouns "I", "me", "my", "we", "our", "us" are used.
9. *Evasion*:
 - a. no response to a picture card.
 - b. verbalized rejection of the picture card.
 - c. conversation with the examiner.

Three independent examiners scoring 10 common protocols were in accord with each other 80% of the time. Agreement was lowest in Character-Integrity and Description, indicating the need for further refinement of these categories.

Figures 1 to 3 indicate the results of the scoring of 30 protocols of children ages three to eleven. Responses scored as Schizothymia, Emotionality, Character-Integrity, and Basic Needs (Figure 1) occurred relatively few times at all age levels. Basic Needs responses were present more often but no clear age trend was evident.

A continuous upward trend with increasing years is evident in Sex Role and Activity responses (Figure 2). As children grow older, they tend to respond with less description, fewer self-references, and with less evasion of the stimulus situation (Figure 3).

Figure 1
Schizothymia, Emotionality, Character-Integrity, Basic Needs

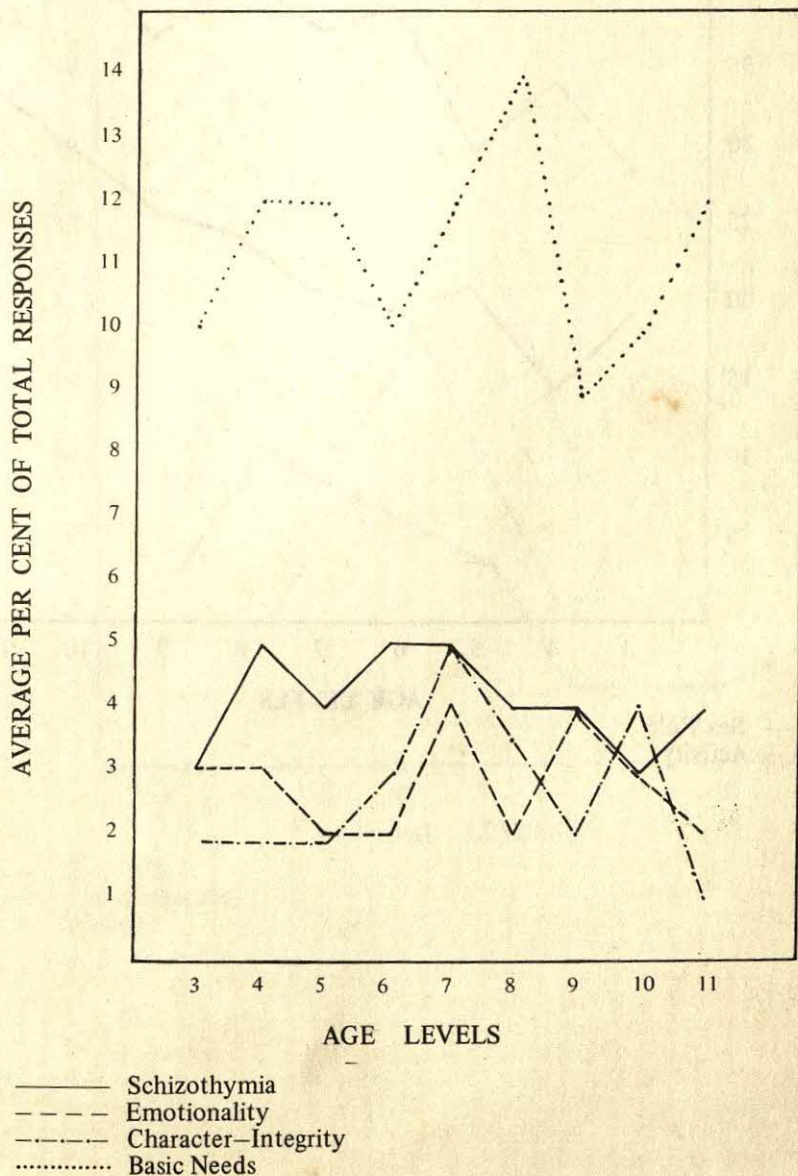


Figure 2
Sex Role, Activity

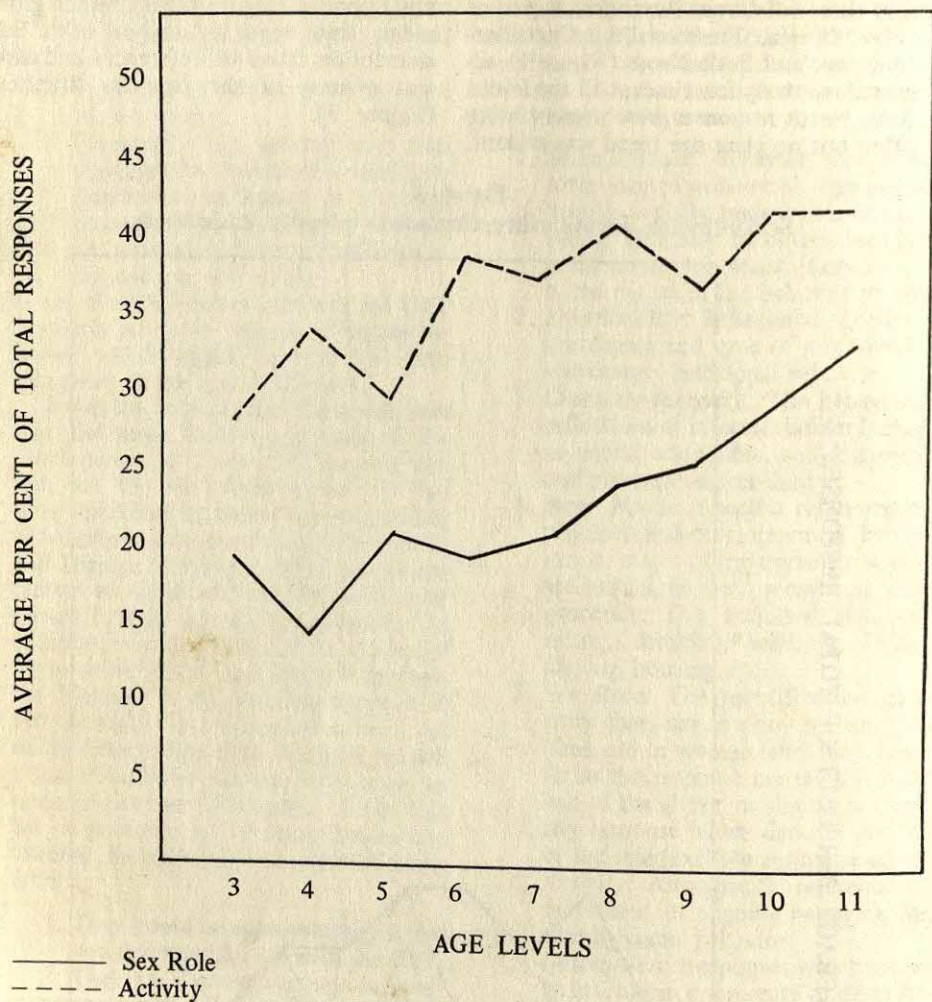
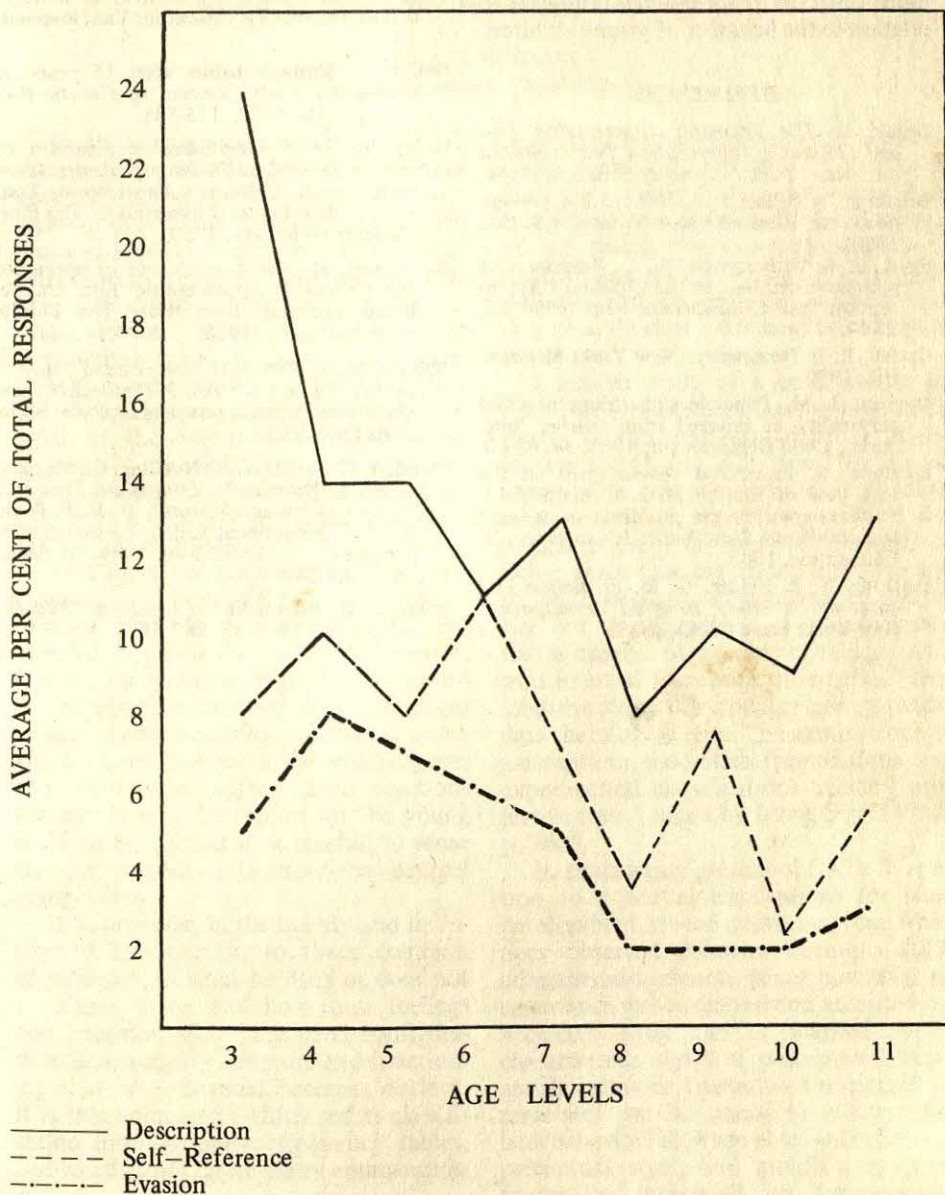


Figure 3
Description, Self-Reference, Evasion



It is felt that with further refinement, content analysis may make it possible to more objectively score CAT responses in relation to the behavior of young children.

REFERENCES

- Bellak, L. *The Thematic Apperception Test and Children's Apperception Test in clinical use*. New York: Grune & Stratton, 1954.
- Bellak, L., & Bellak, S. S. *Children's Apperception Test*. (2nd ed.) New York: C.P.S. Co., 1950.
- Byrd, E. & Witherspoon, R. L. Responses of preschool children to the Children's Apperception Test. *Child Development*, 1954, 25, 35-44.
- Cattell, R. B. *Personality*. New York: McGraw-Hill, 1950.
- Digman, J. M. Principle dimensions of child personality as inferred from teacher judgments. *Child Development*, 1963, 34, 43-60.
- Escalona, S. Emotional development in the first year of life. In M. J. E. Senn (Ed.), *Sixth conference on problems of infancy and childhood*. New York: Josiah Macy, Jr. Foundation, 1963.
- Escalona, S. & Heider, G. M. *Prediction and outcome: a study in child development*. New York: Basic Books, 1959.
- Heyns, J., Verloff, J., & Atkinson, J. W. A scoring manual for the affiliation motive. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.
- Neilon, P. Shirley's babies after 15 years: A personality study. *Journal of Genetic Psychology*, 1948, 73, 175-186.
- Nolan, R. D. A longitudinal comparison of motives in children's fantasy stories as revealed by the Children's Apperception Test. Unpublished doctoral dissertation, The Florida State University, 1959.
- Rosenblatt, M. The development of norms for the Children's Apperception Test. Unpublished doctoral dissertation, The Florida State University, 1958.
- Shirley, M. M. *The first two years, a study of twenty-five babies*. Vol. 3. *Personality manifestations*. Minneapolis: University of Minnesota Press, 1933.
- Skard, A. G., Inhelder, B., Noelling, G., Murphy, L. B., & Thomas, H. *Longitudinal research in personality development*. In H. P. David & J. C. Brengelman (Eds.), *Perspectives in personality research*. New York: Springer, 1960, pp. 247-269.
- Stott, L. H. Personality at age four. *Child Development*, 1962, 33, 287-311.

Normal Preschoolers' Reactions to the CAT: Some Implications for Later Development¹

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In its original conception, the CAT was essentially a method for eliciting characteristic problem-solving reactions to a series of potentially stressful or conflictful pictured situations involving interpersonal relationships, feelings about self and others, and common growth experiences. The procedure further implied interest in how a given range of cognitive and affective resources are in an individual child mobilized in coping and/or defensive strategies, in the extent to which they are objectively successful, and the degree to which feelings can be integrated with action into a cohesive and personally satisfying style of behaving.

To understand an individual child, one is forced to go beyond lists of problems to explore how they are perceived and handled, and how they affect adjustment. One is, for example, not only interested in the presence of defensive mechanisms or appropriate identification, but he wants also to know *how much, for what purpose, and with what effect* these reactions emerge. It may be typical for the young child to be aggressive or fearful, to sense the sibs as rivals, or to experience oedipal competition.

It is, however, in the quality and intensity of his reaction to these common experiences, in what he does or does not do about them, and how these feelings and behavior affect the total configuration of personality structure and functioning that an individual becomes distinct. It is this uniqueness which resists classification into normative frequency tables, and which is not captured by enumeration

of problems and symptoms. In these remarks there is no intention to belittle or deny the necessity for normative standards and objective scoring methods. However, in the search for standardization it is important to remember the CAT's original purpose and its peculiar sensitivity in detecting dynamic meanings of individual responses.

Intensive study of a small sample allowed us flexibility in interpreting a rich variety of data with some depth. Franklin Shontz (1965, p. 252) says, "In the representative case method each individual, as an individual, constitutes one full and complete test of the universal proposition. Other cases that are added later are not to be construed as increases in sample size but as replications of an experiment that is capable of standing or falling on its own merit as a scientific enterprise." This intensive study of individual cases provides data helpful to the "reexamination of assumptions, theoretical formulations, and experimental classifications utilizing projective tests," urged by Irving Sigel (1960, p. 360).

In considering preschool CATs in relation to potential implications for later development, several questions arose. What does observed behavior during a CAT administration denote about how such an experience was perceived and accepted by subjects? What can be learned about characteristic styles of perception? What gratifications or frustrations projected at preschool can be traced in latency and later behavior? How are observed behavior, perceptual style, and gratifications and frustrations integrated into total coping style?

In the sample studied there were clear signs of mild to severe tension in some form in all of the children. No child completely rejected the task, but some degree of fearfulness, uneasiness, evasiveness, or excitement was common to all. However, differences in quality, intensity,

¹ The remarks and hypotheses made in this paper are based on longitudinal research sponsored by the NIMH (Research Grants M-680 and M-4093) and carried out at the Menninger Foundation under the direction of Dr. Lois B. Murphy. The 32 Ss examined in their preschool years, and 65 Ss seen in latency were selected from a larger S population studied as infants by Escalona and Leitch (Research Grant MH-27).

duration, form of expression, and in ways of dealing with the stress of both the interpersonal relationship involved, and the card content were combined in individual ways. Some sex differences were related to background experiences and expectations.

As Bolgar (1956, p. 2) pointed out, these verbal demands required "cognitive and verbal performance in a narrowly circumscribed task . . . designed to arouse considerable affect and painful conflict." Hence, the tension registered verbally by 28 of the 32 children (87.5% of the sample) suggested that speech as a recently acquired skill is particularly vulnerable to stress, recognized in reduced comprehensibility and effectiveness in communication.

Since the Ss were bright children with an average age of four years and nine months, it seemed clear that observed speech and language problems were not simply a function of language immaturity but were related to initial apprehension about meeting new and unfamiliar people, and to conflicts aroused by the content of the cards. Nonetheless most children were responsive to support and encouragement, and roughly one-third were also able to reduce stress by direct verbal protests such as "I don't want to do anymore." In these children, personal integrity was impressively strong.

In the form of speech disturbance, some interesting and provocative sex differences emerged. For example, boys were more subject to articulatory or grammatical distortion, or to deviations in rhythm, by a six-to-one ratio. Girls were more likely to reduce intensity and clarity of the voice by a three-to-one ratio. Quantity of verbalization for the sample was roughly equated for the sexes, except that severe restrictions (sometimes approaching mutism) were seen in four times as many girls as boys. These findings suggested that boys are more pressed by verbal demands, perhaps because speech develops later than in girls, and whatever pressure is experienced is in boys more likely to be handled by overt active processes and in girls by indirect passive maneuvers. Whether this reflects natural sex differences or follows cultural expectations is

an open question. However, verbally constricted children were uniformly constricted affectively and motorically as well, and were known to have verbally aggressive mothers.

Of the 32 children, only four were not subject to verbal disintegration or loss of verbal competence during the course of the test administration. These were distinguished from the majority by an unusually broad range of coping skills, by unusual capacity to use fantasy as clearly distinguished from reality, and interestingly enough by high autonomic reactivity.

Though stress was most frequently expressed by verbal deviation, as described above, it could also be inferred from motor adjustment, predominantly of two kinds: About one-third, equally divided as to sex, were motorically inhibited or restrained, stiff or awkward in handling their bodies, or subject to coordination and balance problems. Roughly another one-third, were characteristically restless and hyperactive. Here boys outnumbered girls by a three-to-one ratio. As in the differences in expressing tension verbally, these differences motorically may have reflected cultural expectations for greater activity in boys. Present though of lesser frequency as expressions of tension were crying, autonomic reactivity, excessive orality, and marked terminal fatigue.

The degree of stress experienced by preschool children in the CAT session called for consideration of factors accounting for its presence. Several aspects of the situation seemed relevant. The children came for the examination by mother's permission, not from their own need. They were asked to respond verbally to an adult male stranger who pressed them to look with new insights at pictures potentially conflict-arousing. They were required to sit for a period of time in excess of their usual attention span, and to use a dictaphone which was for some an object of fear insofar as it magically captured a part of themselves, the voice. It could also be inferred that demands were unclear since word meanings and usage were relatively immature, and such verbal exchanges not typical for most of the lower middle-class children in the sample. Pressed by newness and strange-

ness, in a situation provoking anxiety about separation from mother, straining powers of attention, demanding verbal identification and differentiation at or near maximal levels of comprehension, reducing opportunity for physical activity, and bringing into focus questions about personal adequacy and interpersonal relationships, the CAT experience was stressful for all, and bewildering to a few. For those limited in verbal facility, reticent in self-expression, or unused to dealing with indefinite and unstructured demands, the CAT session contained extra elements of stress.

How stress of this degree was reflected in characteristic perceptual or apperceptive modes appeared worthy of interpretive consideration. First, one quarter of the children consistently misperceived or misnamed the figures on the cards. This was especially true on Card 4, where eight children failed to use the word, "kangaroo." Some children simply talked about "the animal." Others sought explanation or attributed more common names such as dog or cat. A few subjects attributed different names to the larger and smaller figures. While lack of vocabulary might explain misperception for a few children, it could equally well reflect perceived reality differences between children and adults as well as concomitant feelings of isolation or deprivation. Shifting names of the animals could then be seen as part of a process of playing down the potency, aggression or strength of the large figure, and increasing the power of the little figure. In effect, it reflected some effort on the part of the child to reduce the threat of the large figure.

One special aspect of misnaming, that is, confusion in attributing sex to the animal, required further thought. This was particularly prominent on Card 1 where nine children called the background figure a rooster, four others referred to the figure as "he," and one compromised by calling the figure "a mama rooster that goes cock-a-doodle." Forty-four percent of the sample saw the adult figure as male, and as one who was for the majority nurturant, but for the minority, aggressive and punitive. In individual cases, language immaturity, sex role confusion, reflection

of family rearing style, or maternal deprivation could be inferred. A standard interpretation would have been meaningless.

Second, one third of the sample routinely omitted certain aspects of the stimulus situation. In some children this took the form of delay in reporting parts or details which were later supplied spontaneously or in response to the examiner's direct questions. Most frequent omissions were the background chicken on Card 1 and the small mouse on Card 3. In the first case, the omission might be related to distorted or unsatisfying mother-child relationships, and in the second case to denial or inhibition of the experience of aggression. In any event, the tendency to omit details seemed to be part of a process of attenuating attention in order to cope with affective stress, or of selectively sampling the visual field in individually meaningful ways. Many children who regularly omitted some aspect of the stimulus situations obsessively checked and rechecked visually before committing themselves to any response. It was as though they were seeking gratification or control which they felt lacking.

A third perceptual response prominent in one-third of these preschool children was the tendency to stay concrete, to name or describe perceptual elements without integrating them into a story involving interaction of the various figures and the development of logical consequences. Some children mutely refused to proceed toward integration of details, seemingly because of inhibitory or repressive tendencies. Others delayed the integrative process as though seeking orientation and clarity and often called for or utilized offered help and support from the examiner. Concreteness in thinking and perceiving might, of course, in some cases be related to physiological or mental immaturity. However, no clear cutoff point could always and inevitably be related to chronological or mental age. Rather, concreteness and integrative failure expressed efforts to avoid anxiety and/or to reach clarity by staying reality bound and containing conceptualization within a narrow range.

In contrasting records every stimulus was vividly perceived and communicated, with excellent weaving of detail into a closely knit and integrated sequence with both realistic and unrealistic aspects. This fourth consistent perceptual response, seen in 14 (or 41%) of the children, effectively moved beyond the given perceptual stimulus in time and place, often by adding figures or ideas. These children not only described the objective stimulus on the cards but made logical inferences and associations directly related to the stimulus material.

Some children stopped at this point, whereas others developed additional ideas having no apparent basis in reality, and without consistent reference to the child's initial description of the card. In these cases there was impressive freedom for fantasy and tolerance for unreality, sometimes in a primitive, almost bizarre fashion. However, equally notable were balancing skills in maintaining reality contact by returning to objective perceptual stimuli, as suggested by such comments as "after all it's only a picture." Most fascinating here was the coexistence of unusual abilities to discriminate and compare or to be perceptually clear, and to become intensely involved in and satisfied with fantasy of a primary nature. It seemed as though in order to be unrealistic, the child first needed to be very clear about reality. Natively high in sensitivity and reactivity, such children developed a broad range of associations, and vivid perception and communication.

In those making such elaborations, this style persisted into latency. For predictive purposes, it may also be significant that approximately half of this group continued to use fantasy richly at prepuberty, and were in their adolescent years unusually effective in maximizing cognitive potentiality and in finding emotional gratification. On the other hand, slightly less than half settled for a paler emotional existence, but one which appeared more consistent with family expectations and behavior. That is, in the latter cases both fantasy and behavior appeared to be modified defensively in the service of total adaptation.

From these observations several tentative hypotheses emerged:

- 1) Misperception is related to sex-role confusion and/or the feelings of maternal deprivation.
- 2) Habitual omissions reflect distorted mother-child relationships and/or denial and inhibition of aggressive impulses.
- 3) Staying concrete in the CAT may be an effective avoidance device pending cognitive clarity, or it may reflect a pervasive passive orientation.
- 4) Adding ideas or interpretations beyond those usually given to the objective perceptual stimulus is characteristic of children with high potentiality for imagination and creativity. At preschool such children experience unusual gratification in fantasy, but can also clearly discriminate between reality and fantasy. Given family support, they are likely to utilize these skills creatively in the adolescent years. However, if family support is not available, fantasy will be defensively reduced in an effort to adapt to or fit into family standards.

One other aspect of these records, that is, children's ways of coping with the potentially stressful content of the CAT warrants some discussion. Complex and varied coping maneuvers included classical examples of denial (usually in relation to dependency conflicts), repression (usually of aggressive impulses or oedipal wishes), avoidance and withdrawal from negative feelings, and projection of aggression and hostility. These defenses were present to some degree in *all* records. However, defenses varied in intensity and effectiveness, and were often modulated or diminished in proportion to other coping maneuvers. These included delay in the majority of children, role-reversal in half of the children, and in slightly less than half sublimation, regression, identification with the aggressor, conscious seeking of help and reassurance from parents, sibs or the examiner, and the use of humor. All these maneuvers appeared in some individuals to be ways of reducing stress and of delaying participation in order to fend off examiner intrusiveness or to reach clarity about demands and appropriate responsiveness. In addition, they were for some

children ways of covering feelings of inadequacy, or a part of defensive styles which appeared to persist over time. Contrasts between two boys with distinct coping styles illustrate this point.

Martin, age four years and seven months, with bristling hostility, resisted deep involvement with long-winded descriptions, protested against restricting contacts and expressed his own feelings of inadequacy by derogation of adults. In terms not unusual in the sample, he exclaimed, "You stinkers wouldn't let my mother come with me!" In a soundly logical way he put the examiner on the spot by raising questions difficult to answer, but in this interchange his urge to win out in his role of protagonist became more important than the initial issue. It became evident that he was keenly perceptive, that he had a natural preference for order and exactness, as well as strong competitive urges rising out of sibling rivalry constantly exacerbated by his alignment with his mother against his brother and father. In this background he could be very certain, at times almost priggish, and at other times equally uncertain and unwilling to commit himself. To deal with these conflicts he often engaged in intellectual playing with possibilities, even to the point of appearing bizarre at times (as in fantasied parental punishment by dropping eggs on the children's heads). He delighted in showing-up inconsistencies or exceptions, and nearly always maintained a suspicious alertness for the coldness, aggression or stupidity he expected to find in both adults and peers. His intense enjoyment of dramatic conflict gave him some distance from his own anger. Yet, at the same time, it left him grossly fatigued and sometimes helpless. At his low points he introduced recurrent themes of running away or resorted to denial and ambiguity. In the end, however, he yielded to adult power, and was then ready for new protest and intellectual parrying.

By six years and four months, his alert attentiveness, intellectual jockeying for status, dramatic derogation and competitiveness were still prominent, but realistic appraisal of his own skills and limits increased. He made more use of cognitive skills in differentiating and being precise, and less often needed to deny. He no longer fantasied about bizarre punishments or toyed with the notion of running away, but instead punished his parents by temporary emotional withdrawal, followed by conforming behavior acceptable to the parents. He was more ready to accept the advantages of a dependency relationship with his mother, and saw his father as a potentially protective aid in growth toward independence.

By 18 years he was able to mobilize his

unique perceptiveness, had learned to compromise between family pressures and his needs for recognition, and was experiencing college with considerable enthusiasm and success. He was then able to use his exact questioning style in his aerospace courses which he particularly relished because he felt success or failure would be self-determined. He accepted the intellectual challenge and was ready to meet it.

Chester, at slightly under five years, was lively, verbally vivid, and bubbling with a sense of personal worth. He was amiable and responsive, and laughingly reported tongue-in-cheek tall tales with every expectation of jointly enjoying his fantasies with an adult. Nonetheless, he never missed an opportunity to point out the big and the little, and he made it clear that he resented the power of the bigger, stronger figures who had more privileges and more oral gratification. In his large family sibling rivalry was rife, and his casual unsophisticated mother was frequently too busy to be readily available. He considered open protest, but his stoical reality testing told him that adults always win out in the end and little children get pushed around. Yet, he saw them as loved and cared for and punished in ways which were not entirely unfair, too hostile, or of long duration. In the meantime, he could fantasy punishing adults, or poking fun at the mother's recurrently ungainly pregnant figure by calling her "a hippatopomanous." For Chester, misperception of the kangaroo was inconsistent with clear perception and excellent language development, yet it was a nice example of harmless getting even, as was also his fantasied kicking and throwing away of the babies who increasingly robbed him of mother's attention. In this way he tolerated a good deal of frustration because he found many balancing gratifications in fantasy, motor skills, and humorous observations. He was capable of considerable independence through aligning with strong figures, restructuring the environment, and seeking necessary help. He could also avoid, cover up or deny his fears by humor.

At eight years and two months misperceptions were gone, and he was more definite about sequence and outcome, but there was also an increase in attention to concrete detail. He then saw his mother as little more than a family domestic who laid in supplies, cleaned-up after family members, and busied herself at household chores. He moved toward male identification, but the passive economically unsuccessful and educationally limited father was often ridiculed. He no longer fantasied about physical disposition of babies, but rather chose to see them as less adequate and duller. To maintain this stance, he tried to stay casual, and developed some mildly delinquent behavior. The comfort-

able dependence on his mother, enjoyed during the preschool days, was no longer possible. Nor could he with full satisfaction relate to a father he saw as inadequate if he were to believe in his own superiority. These conflicts were enhanced by prepuberty when his younger cognitively more limited brother outstripped him both socially and academically.

By 17½ years, he was a lumbering overweight teenager who slouched in his chair and kept his low mumbled speech at a minimum. Nonetheless, he could with prodding come up with finely discriminated thinking. He was not indifferent to adults nor to his own future, but he was distinctly lacking in initiative, physically sluggish, and emotionally subdued. On the TAT, he projected repeated disasters and helplessness in the face of environmental threat. He had largely given up the idea of college because of limited family resources and his own inertia.

Both boys were in the preschool years struggling with sibling rivalry and oedipal concerns, but they dealt with these problems in different ways. Both were bright, perceptually alert, and intellectually interested in the world around them. Martin protested vigorously, verbally derogated adults, and enjoyed the conflict he provoked. In the end, he was forced to accede, but he remained alert to new possibilities and ready to initiate new protest. His experience and discharge of anger as projected in the preschool CAT was a significant part of his capacity to progress toward independence and maturity. Chester, on the other hand, protested more graciously, in the end yielding out of stoical acceptance of reality. Whereas Martin increasingly mobilized cognitive skills for gratification academically, Chester first dismissed competition by verbally declaring his superiority and later ceased active efforts to compete. In so doing, he avoided real competition with his father, but lost his lively pleasure in the world and his own sense of personal worth.

While these two case records are admittedly incomplete and oversimplified, they support a belief that simple enumeration of problems or of coping maneuvers fails to evaluate the individual dynamic meaningfulness which, in essence, is the strength of the projective method. Just as in medical treatment of physical illness, there are uniformities and common conditions, but each individual is unique. With-

out apology, CAT analysts must seek to understand this uniqueness in relation to standard expectations, feelings, conflicts, and resolutions.

Heretically, in this age of standardization no formula for routine interpretation of the CAT has been given. Instead, it has been emphasized that for all of our preschool Ss, the interpersonal relationship with the examiner in a new, unfamiliar, and bewildering situation, along with the potential conflict stimulated by card content, was exceedingly stressful. How stressful was seen behaviorally in verbal and motor deviations and in affective restriction, protest, resistance, denial and avoidance.

Such expressions of tension were understandable in terms of the artificiality of the examining situation insofar as the child participated not out of his own need, but from adult pressures already experienced by most young children as excessive. Furthermore, he was asked for verbal responses and insights which pressed his developing language capacity and his attention span. He had no choice but to comply, but he did this according to his own perceptual style. It is the examination of this style which is the meat of his responsiveness and which cannot be fully standardized.

Several prominent perceptual responses suggested some hypotheses. That is, misperception beyond that understandable as a product of immaturity reflects sex-role confusion and feelings of maternal deprivation. Omissions of parts of stimulating situations are indicators of avoidance processes in relation to mother-child conflict or denial of aggressive urges. Staying with the concrete or objectively real is an avoidance maneuver giving time to reach clarity or in some cases a function of a pervasive passive orientation. Elaboration is a cue that creativity is potentially available.

Each child deals with the CAT by coping mechanisms which are directed toward reducing stress and reaching clarity about demands. They are, however, highly individual and personal, and their effects, if not their form of expression, are likely to persist over time.

REFERENCES

Bolgar, H. Symposium: Validity aspects of multiple projective techniques in child research. Paper read at meeting of the American Psychological Association, Chicago, 1956.

Shontz, F. C. *Research methods in personality*. New York: Appleton-Century-Crofts, 1965.

Sigel, I. The application of projective techniques in research with children. In A. I. Rabin and M. R. Haworth (Eds.) *Projective techniques with children*. New York: Grune & Stratton, 1960, Pp. 350-363.

Children's Apperception Test Findings with Kibbutz and Non-Kibbutz Preschoolers¹

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The present report is not intended to be a study of the CAT as a method of personality assessment—its virtues and its liabilities. Neither are problems of validity and reliability of direct concern in the present context. The CAT has been used in the present study as a means to an end, rather than an end itself. If as a result of the data presented in this paper construct validity for the CAT accrues, then all to the good.

In a series of studies in which Kibbutz children were compared with non-Kibbutz children on a number of personality variables, some significant differences which obtained in early infancy did not appear in the 10-year-old samples. But some significant differences on a number of other dimensions between the 10-year-old groups were in evidence (Rabin, 1965).

One of the major findings was that Kibbutz infants seemed to be delayed in their ego development as compared with their non-Kibbutz peers, especially as represented by the personal-social dimension of the Griffiths test. The 10-year-olds, however, did not exhibit such retardation. On the contrary, Kibbutz children seemed to be equal, or superior, to their non-Kibbutz counterparts on most personality adjustment and cognitive dimensions employed.

The question arises as to the time or period, between infancy and pre-puberty, at which a reversal of trend takes place, the time at which the slower development of the Kibbutz infant is accelerated and compensation for earlier deficiency results. In *Growing Up in the Kibbutz*, (Rabin, 1965, pp. 201-202), I raised the question as follows: "We note again that,

despite his problematic start, the Kibbutz child from age ten onward progresses quite adequately as far as his overall emotional adjustment is concerned. And again, we do not know yet at what point between the ages of one and 10 years the direction has been reversed. Most likely it is not a 'point' but a 'phase' of corrective experience and development".

The remainder of the paper, therefore, will be concerned with an exploratory study of some possible differences, on some personality parameters, between groups of preschoolers. It was an attempt to see whether Kibbutz five- and six-year-olds show some of the problems they may have encountered as infants or have embarked upon a career of relatively integrated thought and behavior characteristic of well-adjusted latency age youngsters.

Method

As in the previously reported studies, Kibbutz children were compared with those reared in a traditional family setting in the Moshav (a cooperative settlement where the family remains intact). Kindergarten children from several Kibbutzim and Moshavim were sampled. A total of 43 Kibbutz and 36 Moshav children was examined by means of the CAT. The children were between the ages of five and six years. Comparative age and sex data of the parallel samples appear in Table 1.

The CAT (Bellak & Bellak, 1961) was administered in accordance with the recommendations presented in the manual. The children's responses and some additional peripheral behavior items were recorded by the examiners.

Results

The scores obtained for each record differ markedly from each other. On the one hand, the word-count is an objective and simple index; on the other hand, "denial" involves ratings and interpretations of a

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Table 1
Description of Samples: Sex and Age

	Boys			Girls			Total
	N	Mdn. (yrs.)	Range	N	Mdn. (yrs.)	Range	N
Kibbutz	19	5-5	5-0-5-11	24	5-7	5-0-5-11	43
Moshav	16	5-5	5-0-6-3	20	5-6	5-0-5-11	36

more subtle and subjective nature. Each variable will be defined and discussed as the results are presented, postponing interpretation in terms of personality dynamics until later.

Table 2 indicates that generally productivity was quite good for both groups. A few constricted records were found, but the median productivity generally ranged between 19 and 51 words.

As expected, the girls were more productive than the boys, regardless of Kibbutz or Moshav origin. This trend is similar to the one we reported on sex differences in projective responses in another context (Rabin, 1965). On seven of the cards the stories of the Kibbutz boys exceeded the median length of the stories of Moshav boys; on another story median productivity was equal; and on the two remaining stories Moshav productivity was higher. This trend is not noted with the girls, productivity being about the same for both groups. Although Moshav girls were more productive on cards 1, 5, 6, 8, and 9,

Kibbutz girls were more productive on cards 2, 4, 7, and 10. The differences in medians are often small and probably insignificant statistically. We can only conclude that there is a trend of greater productivity among Kibbutz boys and no differences between the groups of girls.

Concern with parental figures, as reflected in the CAT stories of youngsters reared in different types of family setting is, of course, of considerable interest. Here again we notice some important sex differences in the comparisons (see Table 3). The number of times "Father" was mentioned in the Kibbutz boys' protocols is more than twice that found in the Moshav boys' stories (using total samples).

The proportion is much higher even if we take the differences in the number of subjects in the two groups into consideration. Similarly, higher frequencies in mentioning the "Mother" are noted for the Kibbutz boys' sample. None of these differences is present when the groups of Kibbutz and non-Kibbutz girls are com-

Table 2
Productivity: Median and Range of Number of Words in Stories

Card	Kibbutz				Moshav			
	Boys		Girls		Boys		Girls	
	Mdn.	Range	Mdn.	Range	Mdn.	Range	Mdn.	Range
1	19	7-300	30	5-450	23	9-96	31	8-110
2	28	15-90	38	12-300	27	14-98	35	12-70
3	30	10-70	40	18-130	27	8-94	40	14-80
4	40	17-66	51	18-150	30	9-90	45	18-100
5	27	6-90	33	17-70	24	5-88	34	5-94
6	26	5-48	29	9-250	24	7-105	37	9-95
7	34	13-76	43	18-200	32	19-90	40	16-120
8	33	16-76	38	19-150	29	8-116	44	10-120
9	22	8-48	33	10-90	31	13-140	39	14-130
10	22	8-44	33	12-118	22	16-118	32	7-100

Table 3
Number of Times Parents were Mentioned in the
Records of Each Group and Number of Positive
(+) or Negative (-) References to the Parents.

	Mention		Father		Mother	
	Fa	Mo	+	-	+	-
Kibbutz (b)	49	51	11	6	19	1
Moshav (b)	19	23	1	2	5	5
Kibbutz (g)	61	94	10	7	32	9
Moshav (g)	64	92	5	6	14	12

pared with each other. The frequency of mention of father and mother is almost identical for both groups.

Another interesting set of comparisons appears in the second half of Table 3. Whenever possible, the quality of the attitude by a parental figure was rated positive or negative depending on the information that was available. The response was scored positive "When *S* mentions support or affection on the part of a parent," whereas "When *S* mentions anger, verbal aggression and/or physical aggression toward the 'child' in the story" it was rated as negative. In the first place, we note that both Kibbutz boys and girls produced more evaluative responses of parents. Moreover, the proportions of positive evaluative responses for the Kibbutz groups are much higher than for the Moshav. In the latter there is a greater trend toward ambivalence in parental relationships. This is quite consistent with developments in later childhood

reported by the present investigator (Rabin, 1965).

In Table 4 the relative emphasis of certain themes and story characteristics based on ratings is reported. The five variables we chose to report on are those on which ratings were available for almost every card. We omitted the results on such variables as sibling rivalry, Oedipal intensity, and identification. These were included in the scoring schedule, but the number of ratings was so small as to obviate any reasonable comparison between the groups.

Aggression was defined in our scoring manual as any mention of violence, anger, or threat of violence. On three of the cards the stories of Kibbutz boys include more aggression than those of Moshav boys. The reverse is true on two other cards. Thus, the overall differences are not marked. The results are clearer with the girls where the emphasis on aggressive themes is more frequent among Kibbutz

Table 4
The Specific CAT Cards on Which
Particular Variables Were Rated
as More Dominant, Either in the
Kibbutz (K) or Moshav (M) Groups.

	<i>Aggression</i>	<i>Action</i>	<i>Feeding</i>	<i>Omission</i>	<i>Denial</i>
	Directions of emphasis				
Boys (K vs. M)	K-1,3,5 M-4,10	K-5,8	K-2,3,4,7,9	K-8,10 M-1,3,5	K-2,3,4,10
Girls (K vs. M)	K-1,3,6,8,9 M-10	K-3,6	K-3,9	K-2,10	K-2,3,7,10

than Moshav girls; the count in terms of cards is five to one.

Activity refers to the level of activity in which the hero of the story is engaged. The range is from a score of 1 (Passivity) to a score of 3 (well planned, organized activity). Here, as we may see from the Table, the Kibbutz boys and girls tend to indicate higher levels of activity on some of the cards. None of the cards indicates higher levels of activity in the stories of Moshav children.

Feeding involves any mention of food, eating, preparing food, etc. It is quite clear that the Kibbutz boys, and to a lesser extent Kibbutz girls, are more concerned about oral supplies than their corresponding Moshav peers.

Omission was scored when a figure usually responded to received no mention at all. Here the results are equivocal for the boys, but the Kibbutz girls show a higher frequency of omission on two of the cards.

Denial is probably the most subjective of the scores and is maximally reliant on interpretation by the rater. The omission of the "most prevalent perception of a figure or situation" (e.g. viewing card 2 as a cooperative scene) is the basic definition of this rating. The data obtained illustrate that both Kibbutz boys and girls more frequently "denied" common themes. It is also interesting to note that the denial occurred in stories to practically the same cards—2, 3 and 10—both for boys and girls. It may well be that these cards differ systematically in their meaning for the Kibbutz children.

Discussion

If we are to consider the length of the stories as an index of verbal fluency and partly of intellectual development, we might arrive at the conclusion that there are no marked differences between Kibbutz and non-Kibbutz preschoolers. There is some evidence to indicate that the Kibbutz boys are more fluent and free in their verbalization than the Moshav boys. This does not hold for the girls.

The significance of parental figures in the fantasy productions of the Kibbutz boys is in marked contrast to the Moshav

boys. It is difficult to say whether it is a reaction to the so-called "parental deprivation." It is, however, in marked contrast to the relative lack of concern with family and parents in the TAT stories of Kibbutz adolescents. Apparently the Kibbutz boys, as compared with Moshav boys, pass through a stage of parental dependency during early latency which gives way to later extreme independence. The girls may follow the same pattern, but in this respect the Moshav girl is similar to the Kibbutz counterpart.

Consistent with the results at later ages are the relatively positive attitudes of the Kibbutz children toward the parental figures. We have previously related this phenomenon to the relatively lower Oedipal intensity and attendant lower ambivalence in the attitude of Kibbutz children to parental figures (Rabin, 1965).

The results on the remaining five variables will probably need to be fortified with more statistical analysis in the future. We do note a higher level of activity in the stories of Kibbutz children and a higher level of aggressiveness in the stories of Kibbutz girls. These are quite consistent with trends noted at later ages. More frequent mention of feeding in the stories of Kibbutz boys especially might indicate a degree of persistent oral dependency not noted in earlier studies.

Data on omissions are not sufficiently consistent. But the scores on the denial category, if confirmed upon further scrutiny, would point in the direction of a major defensive operation or coping mechanism characteristic of the Kibbutz group. Again, this tendency may be related to the manner in which the Kibbutz adolescents were shown to handle sex impulses. Repression and suppression seemed to be some of the major methods which enabled them to handle their sex impulses.

The results obtained thus far do not quite enable us to answer the questions raised at the outset of the paper. It can be said, however, that by the time the Kibbutz children reach the age of five years they have overcome the intellectual deficit of early years (productivity), established a positive relationship to parental figures and projected a fairly high level of activity, i.e. ego coping behavior. How-

ever, evidence of stronger oral dependency and reliance upon denial may be important flies in the ointment.

These, of course, are just preliminary data. We are proceeding with more detailed analyses of the stories, with a broader range of personality parameters suggested in the literature (Haworth, 1966).

REFERENCES

- Bellak, L., & Bellak, S. S. *Children's Apperception Test (C.A.T.)*. Larchmont, N.Y.: 1961.
Haworth, Mary R. *The CAT: Facts about fantasy*. New York: Grune & Stratton, 1966.
Rabin, A.I. *Growing up in the Kibbutz*. New York: Springer, 1965.

Discussion: The Children's Apperception Test: Its Use in Developmental Assessments of Normal Children

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The assessment of the development of children, normal and otherwise, is an important, still largely unexplored issue. It is an important one theoretically and practically: unless we can really test our theories, our hypotheses, of personality development—of whatever persuasion—in longitudinal studies, we will not know whether they are sound or fictional, and our notions about the upbringing of children will not have a much better basis than those of our grandmothers.

The problems of longitudinal research with children are obvious: it takes a stable "researchable" population and, almost as difficult to find, a stable, non-migratory research staff, committed for at least ten years. If we exclude clinic populations, the motivation of the *S* is a problem, and the size of a statistically useful sample is usually a forbidding budgetary venture.

Projective techniques may be a royal road to the understanding of the psychodynamic development of a large sample of children. If the test administration is simple enough, it may be feasible to give it to successive classes of children in nursery and grade school and later, starting with a large enough sample to allow for considerable attrition over the years.

Another possibility, with a large sample, cancels the time variable problem effectively: one could administer a test like the CAT to a large sample of children at each age level from three through ten years, and study the common denominators at each age level for any number of variables, from the development of preferences for the hedonic tone of stimuli (a term preferred for libidinal modes and aims) to the development of thought processes, and other ego functions, including coping devices, and, of course, facets of socialization and their internalization.

The optimal research strategy would be a mixture of the intensive design and the extensive model of research, whether it involves drug research, problems of

schizophrenia, psychotherapy, or projective techniques (Bellak, 1965; Bellak & Chassan, 1964). I would therefore recommend the study of a large population complemented by a small intensive study of a few youngsters who would individually be followed over the years, preferably by making repeated predictions about their likely development. In this way, the generalizations derived from the large scale study could be checked and enriched.

I have been familiar with Witherspoon's and Byrd's work for many years. Unless I am very much mistaken, theirs were the first attempts to use the CAT for a longitudinal study. Their first paper on this topic (Byrd and Witherspoon, 1954) was published 13 years ago, and they ought to be congratulated for unusual stability of purpose and commitment.

I am glad to hear that Witherspoon's scoring system showed such high agreement when reapplied ten years later; that longitudinal findings dovetailed with the cross-sectional study, providing some normative data for the CAT; and that the CAT was found to provide largely apperceptive responses, increasingly so with age, and in significant areas. My filing system is not as hardy as Witherspoon's, regrettably, and so it was not possible to find some of my earlier correspondence with him and Byrd. It is my recollection, unreliable though as all such recollections are, that I suggested, upon seeing some protocols then, that some of the clues they did not find, such as illumination of the oedipal situation, were at least partly due to the nature of the clues they registered, or rather failed to register, judging by my notions of interpretation. Codification, of course, by content analysis or any other attempt is a difficult matter under any circumstances unless done by members of a trained rating team.

One of Witherspoon's students, Rosenblatt (1958), found data consistent with the hypotheses concerning phallic and

latency age children. This method suggests that the CAT can be an excellent way of investigating such cardinal psychoanalytic propositions. Repeated experiments will help us clarify artifacts, and modify or verify some lawful propositions.

Nolan's study (1959), another one from Witherspoon's laboratory, traced successfully the needs for achievement, affiliation, and power in children. The lack of sex differences in the Rosenblatt and Nolan studies is puzzling. There might be an explanation in the finding that both sexes see mother often as the authority, provider, and punitive agent. To examine these findings meaningfully, one would have to state clearly just what sex differences are expected by psychoanalytic propositions and see in what way one could or could not expect to find evidence for or against it in the CAT. Perhaps one need not expect sex differences in these instances.

I have some concerns about the ongoing factor analytic study. Let me hasten to say that is not because of feelings concerning factor analysis per se. As evidence, let me cite the fact that my associates and I are currently engaged in a fairly large study of ego-function patterns in schizophrenia wherein we not only use a few Cattell factors, but expect the eventual answers to questions of the patterns of ego functions from a factor analysis of our many ratings from interview, psychological test, and laboratory procedures. Factor analysis is, of course, as good as the factors one loads with.

As yet there is no assurance that the factors of schizothymia, emotionality, etc. will have any heuristic or predictive value concerning any other personality variable. After all, any understanding is basically tied to prediction and control. These factors could give the appearance of cleanness because they were born under sterile precautions in the laboratory, but they will have to get dirty when brought into contact with reality and with further theories. What does one do with a factor of emotionality, without having a consistent theory of personality or of development to relate it to? Such factors might have reliability but not enough construct validity, not enough relevance. For in-

stance, the curves on emotionality show a low plateau between five and six, starting a clearcut descent at four, quite consistent with the hypothesis of the latency period. The rise of character integrity with a peak at seven is quite consistent with psychoanalytic hypotheses that the superego develops through seven years, out of attempts to resolve the oedipal problems. On the other hand, one would have expected a plateau until about age ten when the expected preadolescent emergence of pregenital drives might interfere with it again, rather than showing the curve it does in the report.

With regard to Moriarty's paper, let us recall what was said about intensive and extensive design. In distinction to the Witherspoon report, hers is concerned with the intensive following of a few children. To repeat: there need not be any conflict between the two forms of approaches, which used to be called the nomothetic and the idiographic. That conflict has been resolved, thanks to statistical development. I am not familiar with the work of Shontz which Moriarty mentioned, but I am familiar with the single case statistical method developed by Jack Chassan most comprehensively in *Research Design in Clinical Psychology and Psychiatry* (1966). He and I have collaborated on some studies of drug effect and found it quite easy and useful to treat statistically a single patient over various therapeutic sessions as a population of variables. These intensive, single-case, statistical methods need more extensive application to the study of projective techniques.

A number of the hunches the Menninger group found seem interesting, confirmatory, or useful for further heuristic propositions and clinical work. For instance, that they found speech disturbances, as revealed in the CAT, six times as frequently in boys as in girls is consistent with what we know about the incidence of stammering. The fact that the four children with the best verbal ability generally showed the best coping devices ties in with the hypothesis that people who act out in later life (i.e., do not cope well) show evidence of a disturbance of speech development starting at

age two and one-half. Their observations suggest the importance of the study of speech development and remedial steps from the standpoint of the total personality synthesis rather than just for the sake of speech itself.

We should be particularly grateful to Moriarty for pointing out that the epiphenomenon, speech difficulty—a perfectly good nomothetic finding, could have different causative factors in different children rather than one unitary one. Whether psychoanalysts or experimental psychologists, the one cause-one effect type of thinking is much too prevalent and leads to totally unnecessary confusion in many fields.

Of the many other findings, one can quite agree with Moriarty that her data on the coexistence of unusual, good discriminatory powers and unusual, rich fantasy activity are especially valuable, particularly as they apparently remain stable into adolescence unless modified specifically by defenses (e.g., if discouraged by the parents). Also her finding that children who add ideas or interpretations to the CAT beyond the “popular” ones have a high potential for creativity is only one of four important leads of her work which deserve further study and, let us hope, confirmation by others.

Dr. Rabin found a population of children more likely to stay put than most in our milieu here, and one which has generated a good deal of theoretical as well as practical interest. The widest interest was in what the personality differences would be between children brought up with minimal contact with their parents (and brought up in peer groups by other adults) and those brought up conventionally.

Rabin was lucky to study Kibbutz children almost at the last moment before the social structure of Kibbutzim and the rearing of children there is considerably modified due to the technical developments and social forces of change operant in Israel. His specific problem was an intriguing one. He found that Kibbutz children had a delayed ego development in infancy, but that they caught up and became equal or superior to their non-Kibbutz counterpart by preadolescence.

He used the CAT to attempt to find out when and how these changes take place.

This is the sort of problem for which the CAT should be used more and more. It should permit dynamic cross-sections every year, or even every half-year. Reality considerations apparently forced Rabin to study only five and six year olds, though these latency age children should offer pretty good clues. He offers us only potential leads so far, the most definite result seemingly being that Kibbutz boys mention father much more often than non-Kibbutz boys, while girls of the Kibbutz show no differences from non-Kibbutz girls. It may be too early to make definite inferences. If he is correct in concluding that Kibbutz children show more independence later as well as a more positive attitude towards their parents because of their lesser Oedipal involvement and generally lower ambivalence, a revolution in child-rearing may be indicated. In any event, his findings are consistent with current analytical thinking that overstimulation of almost any kind in the family setting is likely to produce difficulties, and that judicious dilution may be healthy.

In summary, the three papers are excellent illustrations of the progress made in methodologically, theoretically, and clinically sound and most useful studies of an apperceptive method like the CAT.

REFERENCES

- Bellak, L. Intensive design drug therapy and the psychotherapeutic process. *Psychosomatics*, 1965, 6, 287-289.
- Bellak, L. & Chassan, J. B. An approach to the evaluation of drug effect during psychotherapy: A double-blind study of a single case. *Journal of Nervous and Mental Diseases*, 1964, 139, 20-30.
- Byrd, E. & Witherspoon, R. L. Responses of preschool children to the Children's Apperception Test. *Child Development*, 1954, 25, 35-44.
- Chassan, J. *Research Design in Clinical Psychology and Psychiatry*. New York: Appleton-Century-Crofts, 1966.
- Nolan, R. D. A longitudinal comparison of motives in children's fantasy stories as revealed by the Children's Apperception Test. Unpublished doctoral dissertation, Florida State University, 1959.
- Rosenblatt, M. J. The development of norms for the Children's Apperception Test. Unpublished doctoral dissertation, Florida State University, 1958.

Replicability of Rorschach Signs with Known Degrees of Suicidal Intent

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Summary: This study examines the hypotheses that Rorschach signs of suicide are more likely to be replicated if criteria of suicide are carefully specified and if attention is given to the time interval between Rorschach administration and the date of suicide. Each subject was given a suicidal intention score based on rating three aspects of his suicide act—degree of planning, lethality of method, and provision for rescue. Biserial correlation coefficients between suicidal intention ratings and Rorschach signs approached statistical significance more often than with a simple dichotomy (attempt vs. non-attempt). Results of statistical tests with two subgroups based on the time interval between testing and suicide were inconclusive.

The Rorschach Test has been explored as an instrument which might provide signs indicative of suicide (Martin, 1951; Linder, 1950; Daston & Sackheim, 1960; Appelbaum & Holzman, 1962; Sapolsky, 1963). While some of the explorations have indicated possible success, most of the replication studies have failed to confirm previous efforts (Neuringer, 1965). One major reason for the failure may lie in the use of superficial criterion groups, such as suicidal versus non-suicidal or attempted versus completed. These categories confound various degrees of suicidal intention which consequently obscure associated psychological differences (Farberow, 1968; Shneidman, 1963). A secondary error may reside in the lack of attention to the time interval between testing and suicide (Farberow & Devries, 1967). The present study reports the results of considering both factors.

The Central Research Unit at the Veterans Administration (VA) Center in Los Angeles has in its files all cases of veterans who commit suicide in the United States. Investigations of suicide with these data have been significant and frequent (Farberow & Shneidman, 1963; Shneidman & Farberow, 1961; Shneidman, Farberow & Leonard, 1962). The Ss and data used in this study are derived from this source. Many of these records contain a Rorschach protocol elicited during the course of a hospitalization or evaluation prior to the patient's subsequent suicide.

Suicidal intention can be studied in terms of immediate probabilities, i. e., lethality ratings (Tabachnick & Farberow, 1961; Litman & Farberow, 1961) or longer range predictions by ratings of

past suicidal behavior. The present study utilizes the latter approach in contrasting the efficacy of a continuum over a dichotomy, i. e., ratings based on intention over categories.

Method

Long range suicidal intention can be judged by rating the observed self-destructive behavior of a victim in terms of three central aspects: (1) degree of planning, (2) lethality of method, and (3) provision for rescue. Reliability, validity and criteria for this rating scale have been reported in more detail elsewhere (Cutter & Farberow, 1968). The sum of the three ratings provides a post hoc measure of intention and can be taken as an operational definition of suicidal motivation. Such an evaluation of suicide permits a differentiation of self-destructive intention regardless of eventual death, which may itself be determined by chance factors.

The Ss consisted of 60 deceased male patients from Veterans Administration neuropsychiatric hospitals. The group characteristics of this sample will be compared to the total population of VA suicides in the United States. The Ss were rated for degree of suicidal intention by evaluating the report of the suicide as described in the medical records of the deceased veteran. Each of the three factors (planning, method, and rescue) were rated and summed to yield a total suicide intention score.

A list of 11 Rorschach signs was compiled, using the eight signs of suicidal intention reported as significant by Martin (1951) and later confirmed by Daston and Sackheim (1960); one sign suggested by

Sapolsky (1963); one from Applebaum & Holzman (1962); and one from Linder (1950). The 11 Rorschach signs used were: (1) $T/IR < 27$ seconds, average initial reaction time for each card; (2) $P < 3$ with $F + \% > 60$: Yes; (3) $CF > 0$ to < 3 , number of Color Form responses; (4) $\text{Sum } C > 1.0$ to < 3.5 , total Color responses; (5) $\text{M-Sum } C < 1.5$, difference between human movement and total color responses 1.5; (6) C &/or CF 1st, Color &/or Color Form responses appear first on Card VIII-X; (7) C &/or CF with Sum of Y , Color &/or Color Form responses appear with the sum of the shading responses ($FY + YF + Y$) equal to zero; (8) $FV + VF < 1.0$, Form Vista; (9) D-6 location on Area Card VII (Sapolsky); (10) Shading/Color used in equal degree (Appelbaum & Holzman); (11) Deteriorating Content in Card IV responses (Linder). This list of 11 signs is shown in Table 2. The available protocols were searched for the signs on the basis of tests and scores reported by the administering psychologist. The unreliability introduced by this approach is noted, but would tend to lower obtained correlation coefficients which were not corrected for attenuation.

Biserial correlation coefficients were then computed between the summed suicidal intention rating and the presence or absence of each sign (except for sign "initial reaction time", for which a Pearson product-moment correlation coefficient was attained). Following Neuringer's recommendations (1965) significance of results was accepted at the 10% level of confidence.

The sample of 60 Ss was divided into two groups—those who showed prior suicide attempts or threats ($N = 15$), and those who showed an absence of this suicidal behavior in their previous history ($N = 45$). Of the 15 with prior suicidal behavior, 13 had made a prior suicide attempt and 2 had made a serious threat by having provided for the method to be used. The 45 showed no history of prior suicidal behavior. This dichotomy duplicated the usual approach to the criterion problem in suicide research. A chi square analysis was performed for each suicidal sign and the suicide attempt dichotomy.

The 60 Ss also were divided into equal subgroups on the basis of the length of interval between Rorschach administration and suicide, using the median of 165 days. The short interval group had a mean of 2.4 months and the long interval group had a mean of 15.8 months. Biserial correlation coefficients between suicidal sign and degree of suicidal intention for each subgroup were then computed.

In addition to the above correlations, an index based on a simple count of all the signs for each Ss was obtained. A Pearson product-moment correlation coefficient was then computed for both the short and long interval groups.

Results

Table 1 gives the group characteristics of the sample studied. Table 2 gives the obtained biserial correlation coefficients for Rorschach sign and criteria of suicide intention and the corresponding chi square indices for the same signs in the total sample of 60 men. Three of the biserial correlations between intention ratings and signs were statistically significant at the 10% level or better, and two others approached significance at the 10% level. The dichotomy of previous versus no previous suicidal behavior for each sign yielded no significant levels of chi square.

Table 3 gives the obtained biserial correlation coefficients for the two groups, corresponding to the short and long intervals between Rorschach administration and suicide, and each sign. Three signs are significant at the 10% level or better in the shorter interval group, while two signs achieved this level in the longer interval sample. If we add the signs that approach significance at the 10% level, the numbers are five and three respectively.

The obtained correlation coefficients with the total number of signs per S in the long and short interval groups and the ratings of suicidal intention were quite small. However, the coefficient obtained with the sample having the longer time intervals was statistically significant at the 5% level of confidence (see Table 3).

Table 1
Identifying Characteristics of Samples Studied

Characteristics of the Samples	Time Interval Between Administration of Rorschach and Suicide	
	Short (<i>N</i> = 30)	Long (<i>N</i> = 30)
Age (Mean)	36.8 (range 24-60)	36.9 (range 19-70)
Marital Status		
Married	15	6
Single	12	17
Divorced or Separated	2	6
Widowed or Don't know	1	1
Education		
Less than 12 years	10	8
High School Graduate	4	7
Some College or Vocational School	7	7
B. A. +	9	8
Occupation		
Unskilled	6	9
Skilled	14	14
Professional	4	6
Student, retired, Don't know	6	1
Religion		
Catholic	13	11
Protestant	15	16
Diagnosis		
Schizophrenic	16	25
Psychotic Depressive	9	1
Neurotic Depressive	0	1
Chronic Brain Syndrome	1	0
Personality Disorder	4	3
Prior Suicide Behavior		
Attempts	7	6
Threats	2	0
Interval between Rorschach and Death (Mean)	2.4 months	15.8 months
Year of Death (Median)	1958	1957

Table 2
Associations of Rorschach Signs with Two Criteria of
Suicide Intention

Rorschach Signs	Correlations of Ratings of Suicide Intention with Rorschach Signs		Prior Suicide Behavior vs. Rorschach Signs
	Obtained r biserial	S. E. of r biserial	Chi Square ^a
<i>T/IR</i> <27 seconds	-.12 ^c	.179	.44
<i>F</i> +% >60; <i>P</i> <3	.08	.220	b
<i>CF</i>	.31**	.154	1.85
Sum <i>C</i>	-.46***	.146	b
<i>M</i> - Sum <i>C</i>	.06	.173	b
<i>C</i> and/or <i>CF</i> 1st	.25*	.154	b
<i>C</i> and/or <i>CF</i> with Sum of <i>Y</i>	.51***	.139	b
<i>FV</i> + <i>VF</i> <1.0	.00	.173	b
<i>D</i> - 6 Area Card VII	-.02	.179	b
Shading/Color	.03	.191	.78
Deteriorating Content Card IV	-.25*	.168	1.45

^aYates' correction for continuity applied.

^bApproaches zero.

^cPearson product-moment correlation.

* 10% (Approaches 10% significance level)

** 5%

*** 1%

Table 3

Obtained Biserial Correlations and Standard Errors for Samples with Short and Long Intervals Between Rorschach Testing and Suicide

Rorschach Signs	N = 30 Interval < 165 days		N = 30 Interval > 65 days	
	r biserial	Standard error	r biserial	Standard error
T/IR < 27 seconds	-.12	.243	-.08	.269
F+ % > 60; P < 3	.57**	.253	-.23	.302
CF	.09	.227	.54**	.208
Sum C	-.54***	.188	-.36*	.229
M - Sum C	-.17	.266	.17	.232
C and/or CF 1st	.25	.319	.21	.222
C and/or CF with Sum of Y	.48**	.187	.59***	.227
FV + VF < 1.0	.32*	.226	-.26	.228
D - 6 Area Card VII	.22	.252	-.23	.235
Shading/Color	.12	.268	-.21	.263
Deteriorating Content Card IV	-.34*	.224	-.16	.248
Sum of Signs	.188	.185	.373**	.185

* Approaches significance at 10% level

** 5%

*** 1%

Discussion

The one major discrepancy noted between this sample and the total VA suicide population is in the category of diagnosis. Ten of the 60 cases were diagnosed "psychotic depressive reaction" and one was diagnosed "neurotic depressive reaction," whereas the usual distribution is 6.9%, based on 527 VA patients who committed suicide 1959-1962. The diagnostic breakdown is 3.4% manic depressive, 1.1% involutional psychosis and 2.4% psychotic depressive (Farberow, Ganzler & Cutter, 1968).

The reason for this disproportionate number of psychotic depressives may be due to faulty diagnosis. A close review of the clinical records of the "depressed" Ss revealed that four of the cases furnished no clear basis for a diagnosis of psychotic depression. In fact, the psychological ex-

aminations and case history data offered information to support neurotic or other diagnoses. A possible explanation may lie in the fact that many final diagnoses were given after the suicidal death, with consequent contamination of the diagnostic process.

The findings in Table 2 reflect the differences arising from the use of a continuum (denoting intention) in comparison to a dichotomy (denoting behavior with implied intention) for the suicidal criteria. Any psychologist using the categories of attempt versus non-attempt would have concluded that suicidal signs in the Rorschach are not replicable. The absence of significant results reflects the obscuring and averaging process of using a dichotomy for criteria. One can even question whether the use of dichotomous selected groups is a psychological variable

appropriate for investigating other scores derived from psychological tests.

Table 3 gives no strong indication that shorter intervals yield more signs with statistical significance. Caution suggests the need for more study, with the continued retention of the present null hypothesis.

The five signs found to be replicable in the present sample (see Table 2) reflect affective responsiveness with minimal controls. The suicidal differentiation comes mainly from the deteriorating content. The authors infer a personality predisposed for impulsive action, in a self-destructive way, but requiring provocation or suggestion from others.

Only the more promising signs reported in the literature were examined. By use of suicide intention, it would be possible to reexamine the other signs of suicide in the Rorschach, or any other psychometric device. We think this is desirable in developing viable theories in attempting heuristic prediction.

Conclusion

1. Rorschach signs of suicide are more likely to achieve replicability if criteria of suicide are carefully specified such as in the present study. Where continuous ratings of suicidal intention were based upon degree of planning, lethality of method, and provision for rescue, biserial correlation coefficients approached statistical significance more often than when a simple dichotomy of attempt versus non-attempt was used.

2. A secondary source of variance in attempting to replicate Rorschach signs of suicide was sought in the time interval between date of administration of the test and the subsequent date of self-termination. The obtained correlation coefficients were only slightly higher in the samples with a shorter interval, indicating insufficient evidence to support the hypothesis.

3. Many promising psychological studies of suicide with the Rorschach approach may have yielded negative results because of use of dichotomous criteria that have obscured, rather than differentiated, associated psychological differences.

REFERENCES

- Appelbaum, S. A. & Holzman, P. S. The color-shading response and suicide. *Journal of Projective Techniques*, 1962, 26, 155-161.
- Cutter, F. & Farberow, N. L. Ratings of intention in suicidal behavior. Paper submitted to the meeting of the Veterans Administration cooperative studies in psychiatry, Denver, Colorado, April 4-6, 1968.
- Daston, P. G. & Sackheim, G. A. Prediction of successful suicide from the Rorschach test, using a sign approach. *Journal of Projective Techniques*, 1960, 24, 355-361.
- Farberow, N. L. & Devries, A. G. An item differentiation analysis of MMPIs of suicidal neuropsychiatric hospital patients. *Psychological Reports*, 1967, 20, 607-617.
- Farberow, N. L., Ganzler, S., & Cutter, F. Epidemiological factors in the Veterans Administration suicides, 1958-1966. Central Research Unit, 1968.
- Farberow, N. L. & Shneidman, E. S. Suicide among general medical and surgical hospital patients with malignant neoplasms. *MB-9*, Veterans Administration, Washington, D. C., 1963.
- Farberow, N. L. The psychology of suicide. *International encyclopedia of the social sciences*. New York: Crowell, Collier, & MacMillan, Inc., 1968.
- Linder, R. M. The content analysis of the Rorschach protocol. In Abt, L. E. & Bellak, L. (Eds.), *Projective psychology*. New York: A. Knopf, 1950.
- Litman, R. E. & Farberow, N. L. Emergency evaluation of self-destructive potentiality. In Farberow, N. L. & Shneidman, E. S. (Eds.), *The cry for help*. New York: McGraw-Hill, 1961, (Rev. ed. 1964) pp. 48-59.
- Martin, H. A. A Rorschach study of suicide. Unpublished doctoral dissertation, University of Kentucky, 1951.
- Neuringer, C. The Rorschach test as a research device for the identification, prediction, and understanding of suicidal ideation and behavior. *Journal of Projective Techniques and Personality Assessment*, 1965, 29, 71-82.
- Sapolsky, A. An indicator of suicidal ideation on the Rorschach test. *Journal of Projective Techniques*, 1963, 27, 332-335.
- Shneidman, E. S. & Farberow, N. L. Suicide, the problem and its magnitude. *MB-7*, Veterans Administration, Washington, D. C., 1961.
- Shneidman, E. S., Farberow, N. L., & Leonard, C. V. Suicide—evaluation and treatment of suicidal risk among schizophrenic patients in psychiatric hospitals. *MB-8*, Veterans Administration, Washington, D. C., 1962.

- Shneidman, E. S. Orientations towards death. In White, R. W. (Ed.), *The study of lives*. New York: Prentice Hall, 1963.
- Tabachnick, N. D. & Farberow, N. L. The assessment of self-destructive potentiality. In Farberow, N. L. & Shneidman, E. S. (Eds.), *The cry for help*. New York: McGraw-Hill, 1961.

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Rorschach Content as a Means of Studying Child Development

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Summary: The qualitative aspects of the content of Rorschach responses of normal 10- and 13-year-old boys have been analysed in order to determine whether significant changes occur between the two age levels. The results show that such changes do occur, and an attempt was made to relate the changes in response content to theories of child development. It was argued that the material is of value not only in corroborating present theory, but also in illustrating areas of development which have so far received limited attention.

Over the years a number of developmental studies based on Rorschach content have appeared in the literature (see Draguns, Haley and Phillips, 1967), yet the results have been remarkably sparse. Virtually the only developmental change about which there is general agreement is the increase in Human (*H*) and Human Detail (*Hd*) responses with age, leading to a corresponding increase in Human Movement (*M*) responses. One possible reason for this is that the majority of the studies have used only the traditional scoring categories, remaining within the framework laid down by Rorschach himself (1921). There is, however, a trend in present Rorschach work which is indicative of a more imaginative approach to content analysis and which embodies ideas which can and should be used in developmental studies.

This trend is the utilization of the qualitative aspects of traditional scoring categories. For example, Ames, Learned, Metraux, and Walker (1952) have scored the different forms of movement, ranging from the expansive or extensor to the static or passive type. Other writers have paid attention to what has been called "object representation" (Mayman, 1967) within Rorschach content. Thus, Alcock (1963) in her study of asthmatic children subdivided the Animal category into "large", "small", and "doubtful" sizes, while Zubin, Eron and Schumer (1965) have proposed dimensions along which Human responses can be differentiated. Of their three scales, one ranges from "angelic" to "monstrous", one from "pleasing" to "debasing", and the third from "dominating" to "submissive".

In addition to this trend there is a further important possibility in studying Rorschach content which, although fore-

shadowed in some respects in recent papers (Haley, Draguns & Phillips, 1967; Mayman, 1967), has not, so far as the author knows, been explicitly stated or applied so far. This possibility is the consideration of relationships between animate objects as expressed within the Rorschach response. Thus, for example, attention may be paid to whether relationships are predominantly between two or three objects, whether these objects are in alliance or in competition, and so on. Such material is contained within the great majority of Rorschach records and its relevance can hardly be questioned.

The present study, therefore, represents an attempt to apply the ideas mentioned above concerning the analysis of Rorschach content to a study of child development, in the expectation that such an application will highlight significant differences between age levels, which may in turn be related to theories of child development.

Method

Subjects

Subjects were 33 10-year-old and 39 13-year-old boys from normal local authority schools in the East Sussex area. They were all of average or above average intelligence on one of the National Foundation for Educational Research Verbal Reasoning Tests, the 10-year-olds having a Mean I. Q. of 113.5 and the 13-year-olds having a Mean I. Q. of 113.8. Four different schools were used (two primary and two secondary modern), one whole class in each of the four schools being tested. The younger children were all in their final year of primary school, with a Mean Age of 10 years 7 months. The older children were in their third year of secondary school, and had a Mean Age of 13 years, 8 months.

Materials

The Rorschach records used in the present study were gathered in the course of a separate project (Coleman, 1966). All 10 cards were given in the normal way with a Performance Proper and an Inquiry (Klopfer, Ainsworth, Klopfer, & Holt, 1954). All children were tested individually by the author during a school session and the responses were tape-recorded.

Scoring

The following scoring categories were used:

Animate objects. In order to be scored the responses had to be:

- (a) a whole response (no parts were included)
- (b) alive
- (c) a main response
- (d) If alternatives were given (e.g. "it could either be a bear or a cow") the first alternative was used.

1. *Animals.* Animals were divided into three categories according to size:

- (a) Large (e.g. lion, cow, eagle)
- (b) Medium (e.g. cat, parrot, chicken)
- (c) Small (e.g. caterpillar, shrimp, butterfly).

Some animals were further divided into categories according to type:

- (a) Aggressive—those which are generally considered to attack without provocation. (e.g. tiger, gorilla, vampire bat).
- (b) Timid—those which are generally considered to be lacking in any form of aggression (e.g. mouse, rabbit, moth).
- (c) Unpleasant—those which are generally considered to be better avoided (e.g. wasp, maggot, locust).

2. *Humans.* Humans were divided into four categories:

- (a) Men
- (b) Women
- (c) Children and Babies
- (d) Witches and Devils

Movement. This was scored if attributed to any animate object—either animal or human—and consisted of the following categories:

- (a) Fighting
- (b) Explosive (e.g. explosions, atomic bombs)
- (c) Dancing
- (d) Oral (e.g. eating, drinking, searching for food)
- (e) Curiosity (e.g. looking at, staring, peering)
- (f) Passive (e.g. resting, sitting, lying down)
- (g) Mating
- (h) Clinging

Relationships. These were scored if two or more animate objects were perceived in any form of relationship. Relationships were divided into the following categories:

- (a) Between Two Equal Objects (e.g. two spiders, a man and a woman, two monsters)
- (b) Between Two Unequal Objects (e.g. a large animal and a smaller one, a wolf and a rabbit)
- (c) Between Three Objects (e.g. three acrobats holding onto each other, two spiders chasing a worm).

Between Two Equal Objects was further divided according to type of activity:

- (a) Fighting
- (b) Other Activity (e.g. waving goodbye, dancing, talking)

Between Three Objects was further divided according to the structure of the relationship:

- (a) Two Large Objects and One Smaller One (e.g. "two people washing a younger child of the family", "two giants fighting over a teddybear").
- (b) One Large Object and Two Smaller Ones (e.g. "two Martians taking something to their king", "two little animals being pushed away by a monster").
- (c) No Distinction in size or status between the three objects.

Imprisonment. This was an additional category scored because of its importance, though not necessarily concerning more than one animate object. A response was given this score if it included a specific reference to restriction in freedom of movement caused by imprisonment, capture or other external force (e.g. "a guinea pig which has cut itself trying to get out

of its cage", "a giant tied to a post and struggling furiously to get free").

Inter-judge reliability scores were derived for all scoring categories. Twenty-four Rorschach records (one third of the total N) were selected randomly and scored independently by two experienced clinical psychologists. The lowest inter-judge reliability scores were within the Movement category, where they ranged from 80% to 91%, with a mean of 85.3%. All scores were considered adequate.

Results

The first step in the analysis of the present results was to determine whether there was a significant difference between the two age groups in the number of responses given. However the mean number of responses for the 10- and 13-year-olds was 14.0 and 16.1 respectively. This difference is not statistically significant ($t = 1.203$).

Following Ames et al. (1952, 1959), and since the total N for each age group was not identical, it was decided to analyze the data in terms of "percentage using" scores, that is, in terms of the percentage or proportion of a group expressing a particular response. In order to illustrate the significances of the differences between these proportions *Chi square* has been used, with the Yates correction for continuity being applied where expected

cell frequencies were less than five. The significances of the differences will be found in Tables 1 to 3.

Table 1 illustrates the differences between the two age groups with regard to the expression of Animate Object responses. The Table shows that there were no differences between the groups in number of responses of animals of different sizes. However the 13-year-olds are shown to have expressed significantly more Timid Animal responses than the 10-year-olds, as well as a significantly greater number of responses concerning Men, Women and Witches and Devils.

Table 2 illustrates the differences between the two groups of children with regard to Movement responses. Three types of Movement response are expressed significantly more by the 13-year-olds—Dancing, Curiosity and Passive Movement. It will be noted that there are two types of Movement which have not been subjected to statistical analysis (i.e. Mating and Clinging responses), the reason for this being that the numbers are too small for such analysis. However, they have been included because of their obvious interest and because in both cases only one age group has expressed these responses: only the 10-year-olds have given Clinging responses and only the 13-year-olds Mating responses.

Table 1
The Proportions of 10- and 13-year-old Children
Who Perceive Various Animate Objects

Object(s)	10 years	13 years	chi square	p
Large Animal	55%	67%	1.105	N.S.
Medium Animal	100%	89%	1.895	N.S.
Small Animal	79%	92%	1.718	N.S.
Aggressive Animal	42%	56%	1.405	N.S.
Timid Animal	45%	72%	5.514	<.05
Unpleasant Animal	39%	41%	0.019	N.S.
Men	15%	46%	7.902	<.01
Women	6%	41%	11.60	<.01
Children	3%	21%	3.526 ^a	N.S.
Witches & Devils	3%	24%	4.447 ^a	<.05

^a Yates correction for continuity has been applied.

Table 2
The Proportions of 10- and 13-year-old Children
Who Perceive Various Types of Movement

Movement	10 years	13 years	chi square	<i>p</i>
Fighting	33%	28%	0.234	N.S.
Explosive	24%	31%	0.379	N.S.
Dancing	3%	24%	4.447 ^a	<.05
Oral	48%	28%	3.135	N.S.
Curiosity	9%	31%	5.093	<.05
Passive	6%	36%	9.204	<.01
Mating	0%	5%	—	—
Clinging	9%	0%	—	—

^a Yates correction for continuity has been applied.

Table 3 is concerned with Relationships between Animate Objects. The Table indicates that there were no significant differences between the overall numbers of 10- and 13-year-olds who express responses involving the various types of relationship. However when only those children who have given responses involving Relationships Between Two Equal Objects are considered, it is shown that there are significant differences between the two age groups. A significantly greater proportion of 10-year-olds who perceive Relationships Between Two Equal Objects perceive such relationships as being of an aggressive nature, while a significantly greater proportion of 13-year-olds perceive such relationships as concerning other activities (such as dancing, talking and so on).

When those children who perceived

Relationships Between Three Objects are considered, the Table illustrates that a significantly greater number of 10-year-olds perceived such relationships as being between Two Big and One Smaller Object, while a significantly greater number of 13-year-olds perceived such relationships as between One Big and Two Smaller Objects. As far as Relationships Between Three Objects in which No Distinction is made between the three participants are concerned, there was no significant difference between the numbers of 10- and 13-year-olds who expressed such a response.

Finally the Table indicates that there was a significant difference between the number of 10- and 13-year-olds who expressed Imprisonment responses—the proportion of 13-year-olds who expressed such responses being significantly greater than that of the 10-year-olds.

Table 3
The Proportions of Those 10- and 13-year-old Children
Who Perceive Various Types of Relationship

Relationship	10 years	13 years	chi square	<i>p</i>
Between Two Equal Objects	39%	62%	3.532	N.S.
Between Two Unequal Objects	12%	10%	0.016 ^a	N.S.
Between Three Objects	33%	41%	0.451	N.S.
Between Two Equal Objects – Fighting	77%	33%	6.412	<.02
Between Two Equal Objects – Other Activities	31%	92%	12.20 ^a	<.01
Between Three Objects– Two Big and One Smaller	64%	6%	7.727 ^a	<.01
Between Three Objects– One Big and Two Smaller	9%	56%	4.360 ^a	<.05
Between Three Objects– No Distinction	27%	38%	0.019 ^a	N.S.
Imprisonment Situations	0%	21%	5.677 ^a	<.05

^a Yates correction for continuity has been applied.

Discussion

The above results illustrate clearly that between ten and thirteen years of age important aspects of the Rorschach responses of normal boys undergo change. In considering these changes two points have to be borne in mind. Firstly, the question arises as to whether such changes may be purely a function of cognitive development, or whether some or all of

the differences between the two age groups reflect the emotional development of this particular stage. Secondly, if it can be accepted that results are a function of emotional development, then it is necessary to ask whether such results are consistent with present theories of child development.

One means of assessing whether response changes reflect cognitive or emotional development is to distinguish in-

creases or decreases among a whole class of responses (e.g. all animal responses), from those which only occur with specific content (e.g. one particular type of animal). In the former case the change is more likely to be due to cognitive development, while in the latter it is more probable that emotional factors are involved. Within the present results only one class of responses increases with age, and that is the class of Animate Object (Human) responses. Significantly more thirteen-year-olds perceive Men, Women and Witches and Devils among their responses, and a similar difference is found for those who perceive Children, though this just fails to reach statistical significance. Comparable results have been reported by numerous other writers (Ames et al. 1952, 1959; Hertz, 1960) and such an increase in Human responses may be considered to be due primarily to cognitive development.

There are no other results which follow this pattern; all the differences between the two age groups found in the present study, apart from those relating to Human responses, may be considered as changes in specific content categories rather than in a class of responses. The first of these relates to the category of Timid Animals; while in general there are no differences in the numbers of ten- and thirteen-year-olds who perceive various sizes of animal, nor in the numbers who perceive Aggressive or Unpleasant animals, a significantly higher proportion of thirteen-year-olds perceive Timid Animals. It seems probable that this difference reflects the uncertainty in relation to assertiveness and self-expression that young adolescents may be expected to feel (Blos, 1962).

With regard to Movement responses, here again there is no evidence of an overall increase with age, but rather of increases in specific types of Movement. Significantly more thirteen-year-olds express Passive Movement, a result which complements that concerning Timid Animals mentioned above. There appear to be at least two possible explanations for this result. On the one hand it may be that responses implying passivity are indications of adolescent defences against what Erikson calls "the anarchy of drives"

(1965, p. 440); on the other hand it is possible that such responses reflect an underlying ambivalence concerning the move towards independence and maturity. The fact that more thirteen-year-olds express Dancing responses undoubtedly reflects an increasing social awareness and interest in heterosexual activities, as does the rise in Curiosity responses. The increase in both Dancing and Curiosity responses is corroborated by the work of Stein (1956), who reports similar results.

There are two categories of Movement response which were too infrequent for statistical analysis, but which are important nonetheless. Two of the thirteen-year-old boys expressed Mating responses while none of the ten-year-olds did so; on the other hand, three ten-year-olds expressed Clinging responses while none of the thirteen-year-olds did so. Both the sexual awareness of the two pubertal boys and the dependency of the three younger ones are strikingly consistent with theory.

In considering Relationships, it is remarkable that there are no significant differences between the numbers of children in each age group who perceive any of the three types of Relationship considered here. In other words, in terms of overall totals, no significant changes occur during the three-year interval. However, when the results are analyzed more closely it is found that there are significant differences between ten- and thirteen-year-olds but that these lie in the quality rather than in the quantity of the relationships. Of those who perceive Relationships Between Two Equal Objects, a significantly greater proportion of the younger boys perceive such relationships to be concerned with fighting, while a significantly greater proportion of the thirteen-year-olds perceive these relationships to be of a social and cooperative rather than aggressive sort. Such a result is consistent both with the evidence suggesting that the nature of the peer group at ten years of age is more transitory and unstable than at thirteen years of age (Austin and Thompson, 1948; Mussen, Conger and Kagan, 1963), as well as with the psychoanalytic theory advanced by Blos (1965) concerning the

exacerbation of the aggressive drives during the pre-adolescent period.

Differences in quality are also to be found when consideration is given to Relationships Between Three Objects, though comparisons here have been made between types of structure rather than between types of activity. Significantly more ten-year-olds who perceive such relationships perceive them to be Between Two Big and One Smaller Object, while significantly more of the older boys who perceive Relationships Between Three Objects perceive them to be Between Two Small and One Bigger Object. Although no specific evidence can be produced in support of this result, it is illustrative of general expectations concerning development. The ten-year-old boy, in spite of four or five years of schooling, is still involved essentially with the primary family relationship. His fundamental group is that of two adults and a child and he has not yet formed sufficiently constructive ties with peers for these to have superseded the family triad. The thirteen-year-old, on the other hand, appears to have reached a stage where just this has happened. The triad of which he is the most aware is that of two children and an adult. He has been joined by another figure of similar status and thus is no longer alone in relation to two adults, as the ten-year-old is, but sees himself as belonging to a group of his own age, the members of which together form a relationship with a single adult.

The final result, that concerning Imprisonment responses, illustrates vividly the situation of the young adolescent. A significantly higher proportion of the older boys expressed responses of this kind, and it seems likely that such responses reflect an increasing move towards independence (Coleman, 1968), coupled with an awareness of the limitations imposed both by the external world and by internal anxieties.

The importance of the above results lies in two particular areas. Firstly, such results provide an illustration of the use of a method for studying child development which has received little attention in the past. Although much projective test material has been gathered in the course of

numerous longitudinal studies of development, the analysis of this material has on the whole followed traditional lines. It is to be hoped that the types of analysis exemplified in the present study can be applied in wider and more varied contexts. Finally, while the results are in many respects consistent with theory, at least some of the material touches on areas of development which have been little explored, such as the structure of three-person or triadic relationships. Thus it seems probable that this method can be used not only to corroborate present theory but also to increase our knowledge and to widen perspectives.

REFERENCES

- Alcock, T. *The Rorschach in practice*. London: Tavistock, 1963.
- Ames, L. B., Learned, J., Metraux, R. W., & Walker, R. A. *Child Rorschach responses: Developmental trends from two to ten years*. New York: Hoeber-Harper, 1952.
- Ames, L. B., Metraux, R. W. & Walker, R. A. *Adolescent Rorschach responses*. New York: Hoeber-Harper, 1959.
- Austin, M. C. & Thompson, G. C. Children's friendship. *Journal of Educational Psychology*. 1948, 39, 101-116.
- Blos, P. *On Adolescence*. New York: The Free Press, 1962.
- Blos, P. The initial stage of male adolescence. *Psychoanalytic Study of the Child*. 1965, 20, 145-164.
- Coleman, J. C. The relation between overt fighting and aggressive fantasy in boys aged ten and thirteen. Unpublished Ph.D. dissertation. University of London. 1966.
- Coleman, J. C. Changes in T.A.T. responses as a function of age. *Journal of Genetic Psychology*. 1968, in press.
- Draguns, J. G., Haley, E. M., and Phillips, L. Studies of Rorschach content: Part I. *Journal of Projective Techniques and Personality Assessment*. 1967, 31 (1) 3-32.
- Erikson, E. Identity versus identity-diffusion. In *Readings in child development and personality*. Mussen, P. H., Conger, J. J. and Kagan, J. (Eds.) New York: Harper & Row, 1965.
- Haley, E. M., Draguns, J. G. & Phillips, L. Studies of Rorschach content: Part II. *Journal of Projective Techniques and Personality Assessment*. 1967, 31 (2), 3-38.
- Hertz, M. The Rorschach in adolescence. In *Projective techniques with children*. A. Rabin and M. Haworth (Eds.) New York: Grune & Stratton, 1960.

- Klopfer, B., Ainsworth, M. D., Klopfer, W. G. & Holt, R. R. *Developments in the Rorschach technique*. Vol. 1. New York: Harcourt, Brace & World Inc., 1954.
- Mayman, M. Object-representations and object relationships in Rorschach responses. *Journal of Projective Techniques & Personality Assessment*. 1967, 31 (4), 17-24.
- Mussen, P. H., Conger, J. J. & Kagan, J. *Child development and personality*. New York: Harper, 1963.
- Rorschach, H. *Psychodiagnostik*. Berne: Bircher, 1921. (Translated as *Psychodiagnostics*. New York: Grune & Stratton, 1942).
- Stein, H. Developmental changes in content of of movement responses. *Journal of Projective Techniques*, 1956, 20, 216-223.
- Zubin, J., Eron, L. D. and Schumer, F. *An experimental approach to projective techniques*. New York: Wiley, 1965.
- John C. Coleman
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Transformations of Rorschach Content under Two Hypnotic Trance Levels

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Summary: Changes in Rorschach responses obtained in an un hypnotized state, a medium hypnotic trance and under deep hypnosis suggested that content can be interpreted as symbolizing important unconscious processes. As the depth of hypnosis increased, content tended to become sufficiently transparent to verify and extend the meaning of the original, un hypnotized response. Other alterations in the Rorschach related to the depth of the trance level were noted.

Hypnosis has been used to validate the Rorschach by experimentally inducing various emotional states and then noting concomitant changes in responses (Bergmann, Graham & Leavitt, 1947; Counts & Mensh, 1950; Lane, 1948; Levine, Grassi & Gerson, 1943; Mercer & Gibson, 1950; Sarbin, 1939). An alternative procedure is to suggest psychopathology, such as a neurosis, to hypnotized Ss and then to observe the effect on Rorschach patterning (Beck, 1949).

Another hypnotic technique which could prove to be of value in furnishing construct validation for the Rorschach has, however, remained unexplored. It is a generally held notion that deeper levels of the hypnotic trance tend to circumvent psychological defenses and thereby provide a more direct entry into the unconscious. If this is true, then it should be possible to investigate Rorschach content by noting alterations in symbolism through successive levels of the hypnotic trance. The "meaning" of a particular response should become more overt and blatant as the unconscious becomes more accessible. For example, if a S sees a spider chasing a bug on card x in an un hypnotized state and then uses the same area to report "my mother trying to get me" while in a deep trance it can be inferred that Rorschach contents are symbolic but decipherable manifestations of covert psychological wishes, conflicts and fears. The present study investigates this assumption.

Method

In order to use hypnosis effectively in this kind of study, a S had to be found who could (1) enter a trance easily, (2) achieve post-hypnotic amnesia so that

there could be no carry-over effects from one administration of the Rorschach to another and (3) regress, on command, into various levels of the hypnotic trance. Such a S, NF, was encountered by one of the authors (J. R. Hodge), almost fortuitously, during the course of psychiatric treatment. NF is a 31-year-old married female with two children who had been receiving psychotherapy on an out-patient basis for about three years. Before establishing a relationship with her present therapist she had been cared for briefly in a private psychiatric facility and seen by one other psychiatrist. Her initial symptoms included depression, severe tension headaches, a spider phobia and aggressive feelings toward her mother, husband and children. She had been diagnosed as a "depressive reaction in a passive-aggressive personality, hysterical type" and an "inadequate personality with passive-aggressive and depressive features." This present study is therefore limited by the fact that the S is emotionally disturbed and a psychiatric patient.

NF was first given the Rorschach in a normal waking state. Next, she was hypnotized, amnesia was suggested for the first administration and, after a moderate trance level was induced, the Rorschach was readministered. Amnesia was again attained, a deep level of hypnosis was produced and the Rorschach was administered for the 3rd time. Previous to the experiment the S had been trained to enter various, defined levels of hypnosis upon command.

The Rorschachs were examined clinically in order to ascertain whether the predicted changes in content had occurred. However, in order to establish

statistical significance, the protocols were reproduced, coded, and presented to 17 graduate students in an introductory course in projective techniques with the following instructions:

These three protocols of a 31-year-old married woman have been obtained successively in a normal waking state, a medium hypnotic trance and a deep hypnotic trance. The order has been randomized and the records have been coded as "alpha, beta and gamma." Assume that "content" on the Rorschach is often symbolic and only indirectly expresses underlying, unconscious wishes, fears and conflicts. Further assume that hypnosis tends to remove psychological defenses and that the deeper the trance the closer the Rorschach content will reflect the subject's unconscious processes. Read the protocols carefully and then, on this sheet, place "1" beside the record which you believe was obtained in a normal state; "2" beside the record obtained in a medium trance; and "3" beside the record obtained in a deep trance.

Assuming the null hypothesis, that there are no real differences in content which would allow the three protocols to be correctly ranked, then six combinations would be equally probable: the correct arrangement—which happened to be beta, gamma, alpha—(BGA)—and five others ABG, AGB, BAG, GAB, GBA. Therefore, the probability for guessing correctly would be $1/6$ and, using the binomial, exact probabilities for seventeen rankings can be calculated.

Results

Fifteen of the 17 students ranked the protocols correctly. The odds of 15 or more "hits" out of 17 tries are .00000000-020559. The results are therefore highly significant. None of the 17 students ranked the deep level (alpha) protocol out of place. The two "misses" interchanged the moderate trance and un hypnotized state. The protocols are presented on the following pages. Even a cursory examination will reveal the obvious increment in blatant content from the un hypnotized state through the moderate trance state to the deep trance. The increase in the aggressive tone alone would suffice to differentiate the records; and, of course, the final breakthrough of florid sexual content is striking in the deep trance state.

Discussion

A perusal of the protocols brings out

some other interesting facets of this experiment. The total number of *R* increased through the trance state. It is well known that individuals tend to talk less under hypnosis but, apparently, the opposite may be the case when *Ss* are asked to respond to the Rorschach. Evidently, hypnosis breaks down conscious barriers and both the quantity as well as the candor of the responses increase. Thought processes become looser as the trance becomes deeper: $F + \%$ diminishes, color becomes more labile and, as noted, aggressive, oral and sexual content become more blatant; in a sense, psychopathology rises as deeper ingress into the unconscious is obtained. The protocols also tended to become richer, more interesting and perhaps even more creative. The form level drops but, to some extent, the responses become striking, variegated and detailed. Relationships and conflicts which are hinted at in the un hypnotized state are developed and crystallized almost to the point of transparency. During therapy with NF, an Electra complex was uncovered and it was found that, as a girl, NF had hated her mother and vied for her father's affection. Today, the struggle continues inasmuch as NF still contests with a mother who exerts an undue influence over her husband. This theme runs through all her protocols, finally finding rather direct expression under deep hypnosis where the maternal conflict, fear of attack and penis envy are only thinly disguised.

The present findings tentatively suggest that Rorschach content does reflect, in symbolic form, important unconscious processes. This conclusion, however, should be interpreted with reservation. It has been suggested by Sarbin and Farberow (1952), on the basis of certain inconsistencies in Rorschach patterning in age regression experiments, that hypnotic states are really a form of role-taking. If their explanation is valid, then the *S* in the present study may have equated depth of trance with psychopathology and her Rorschach may be reflecting histrionic perceptual inaccuracy rather than genuine ego disintegration. It would therefore be advisable to replicate this study with *Ss* who are free from psychopathology and as naive as possible about the supposed effects of hypnosis.

Beta

(Unhypnotized)

- I. 5" Could be a bat or a . . . Could be a moth . . .
(pause) I see two hands. (at top) (Q) Looks like
they might be conducting an orchestra. (pause)
That's about all.
- II. 10" These look like two animals (coughs). Might
have been fighting . . . looks like blood dripping
from the bottom (Q) They could be dogs.
- III. 12" Middle looks like bow tie. Red bow tie
(coughs).
And two female figures. (Q) might be dancing.
Little red figures on the top look like they
might be some one diving off the diving board.
- IV. 10" This one looks like a grotesque monster.
(Q) Very large feet. (Q) (pause) He looks as
though he might be stranded in mid air. In the
midst of the jump.
- V. 11" This looks like a bat (cough). (Q) Looks
like it's in flight.
- VI. 7" Looks like a totem pole at the top. Bottom
part of it looks like it might be an animal skin
or a bear rug. (Q)
(Q) No, it's furry. The shape also.
- VII. 13" Looks like two female dancers. Can't see
anything else about it.
- VIII. 4" Looks like two bears. Possibly climbing up
the side of a fir tree. (Q) . . . shape and pos-
sibly the coloring
- IX. 24" Reminds me somewhat of an xray. (Q)
Pelvis. (Q) Yes, color. (stares). That's all.
- X. 17" I see some spiders. (Q) Crawling. Looks
like two snakes on the bottom. (Q) Yes. I've
seen green snakes. Looks like two crabs over
on the side. (Q) Not sure. Looks like they might
be crawling toward pink shading things that
look like coral.
- W = 6 M = 4 A = 8 R = 17
D = 10 (M) = 1 H = 3 P = 7
d = 1 mF = ½ (H) = 1 airt = 11.3
FM = 5 Hd = 1 W:D = 6:10
Fc = 1 blood = 1 W:M = 6:5
cF = ½ app = 1 FM:M = 5:5
F = 3 emb = 1 ΣC:M = 3:5
FC = 3 obj = 1 ΣC:Σc = 4½:1¾
CF = 3
- W F A P
W F A
d M Hd
- D { FM A P
 CmF blood
- D FC app
- W M H P
D M H
- W (M) (H)
- W FM A P
- D F emb.
D Fc obj.
- D M H
- D { FM A P
 FC tree
- W CcF xray
- D FM A P
D FC A P
D { FM A
 CF geol

CF..... = 3	tree..... = 1	FC:CF:C = 3:3:0
	xray..... = 1	A%..... = 53
	geol..... = 1	F%..... = 18
		F+%..... = 100

Gamma

(Hypnotized: Moderate State)

- | | | | | |
|---|---|-------------------|--------------------|---|
| I. 12" This could be a bat. Also, looks like it could possibly be a figure in the middle. (Q) Female figure. (Q) (pause) not really quite sure . . . two hands at top are connected to the figure. Might be ready to strike someone. | W | F | A | P |
| | D | M | H | |
| II. 10" (coughs) Two animals fighting. (Q) Looks like fighting over a piece of food in the middle. And they're both bleeding. Yet, at the same time, red at the bottom would be a red butterfly. | D | { FM
F±
CmF | A
food
blood | P |
| | D | FC | A | |
| III. 10" (coughs) I see a red bow tie in the middle. Two figures — might be marionettes. (Q) Yes, but I'm not sure what the action is. Heads are shaped like an ostrich. Two red dots on the top bother me. Don't know what they are. | D | FC | app | |
| | D | (M) | (H) | |
| IV. 19" This is . . . could be a gorilla. Feet are terribly out of proportion and so are its arms. (Q) This part looks like the trunk of a tree. Leaping from a tree. | W | { FM
F | A
tree | |
| V. 1" Looks like a moth. (Q) Flying. Also looks like top of it could be the ears of a rabbit. Bottom part looks like it could be the hind legs of a rabbit. Running, jumping. | W | FM | A | |
| | D | F | Ad | |
| | D | FM | Ad | |
| VI. 10" Top of this looks like an indian totem pole. Top of the totem pole . . . Looks like a face (Q) Kind of reminds me of my dog. Whiskers. Bottom part looks like an animal skin. Doesn't have a head though. | D | F | emb | |
| | D | F | Ad | |
| | D | Fc | obj | |
| VII. 19" These look like two dancers. They're moving. Looks like there would be a spot light on them. Darker here. Bottom looks like it might be a mountain. (Q) Yes, shading and also the . . . background (vista) of the picture. | D | Mc' | H | |
| | D | cF | geol | |
| VIII. 5" These are two bears. Looks like one of their back paws is attached to a honey comb. (Q) Yes, color. Top part looks like a fir tree. (Q) Yes, climbing the tree. | D | { FM
CF
FC | A
food
tree | P |
| IX. 11" (coughs) Top part looks like it could be two clowns with pointed hats. (Q) Looks like they're | D | (M) | (H) | |

moving but not sure what they're doing. Can't say for sure.

Greenish part looks like an xray of the pelvis (coughs).

Bottom part is the color of coral. (Q) Looks like four distinct rocks. And the color of coral.

- X. 6" Here again we have coral — the pink. And spiders. Looks like they're chasing the caterpillar . . . the green. Bottom are two green snakes. Looks like they might be going after food.

Two crabs on either side of the coral. (Q) They look like they're trying to escape from something.

D CcF xray

D CF geol

D CF geol

D { FM A P

D { FMC A P

D FM A

W = 3
D = 20

M = 2
(M) = 2
mF = ½
FM = 9
Fc = 1
cF = 1½
F = 5
F± = 1
Fc' = ½
FC = 4
CF = 5

A = 10
Ad = 3
H = 2
(H) = 2
food = 2
blood = 1
app = 1
tree = 2
emb = 1
obj = 1
geol = 3
xray = 1

R = 23
P = 5
airt = 10.3
W:D = 3:20
W:M = 3:4
FM:M = 9:4
ΣC:M = 7:4
ΣC:Σc... = 7:3¼
FC:CF:C . = 4:5:0
A% = 57
F% = 26
F+ % ... = 83

Alpha

(Hypnotized: Deep Trance)

- I. 19" I see a bat. I see a . . . looks like a two-headed figure — female figure. With a long skirt (Q) (pause) Could be pushing something away. Looks like there could be very huge type birds on either side of the figure. (Q) Attacking the figure. Bottom part of it looks like a penis.

W F A P
D { M H
FM A

Dr F sex

- II. 14" Looks like two dogs. Have been fighting. Both wounded and bleeding. Seems ridiculous but looks like they're fighting over a penis (laughs). (Lays card on lap. Hands it back).

D { FM A P
CmF blood
F±

- III. 7" See a red bow tie in the middle (laughs). Two figures look half human and half animal (Q). Looks like they might be playing a game of some sort with their hands.

D FC app

D (M) (H)

Red dots on either sides of the heads reminds me of blood. Blood could be running down the side of a face. (Q) Can't point to it. Brings back the time I had surgery on my face. Brings back blood running down.

WS { M± Hd blood
CmF

- IV. 15" Grotesque, furry figure. On top of it isn't a head . . . (Q) Looks like it's just waiting in

W { (FMc) (A)
F± sex

anticipation for something to happen. Waiting to snap at something. Top of it . . . instead of it being a head . . . looks like part of the . . . part of a female sexual organ.

- V. 12" This looks like a moth. Its flying. Middle part also looks like a rabbit with very large ears.

(Q) Running very quickly.

Also looks like two snakes on either side . . . small, narrow part . . . thats all.

W FM A

D FM A

D F A

- VI. 8" See a totem pole. Animal skin. Looks quite furry. Totem pole now looks sorta like a penis.

Standing very erect. Then again, as I see it as a totem pole . . . I can now see an animal face . . . and the animal looks frightened.

D F emb.

D Fc obj.

D M sex

D FM Ad

- VII. 19" Top part of it looks like two dancers. Balanced on the edge of something.

Looks like two mountains . . . with a church in the middle . . . Penetrating the top of the church . . . in between the steeples . . . looks like it could be a penis. Very isolated.

W $\left\{ \begin{array}{l} M \\ F_{\pm} \end{array} \right.$ H thing

D $\left\{ \begin{array}{l} cF \\ F \\ F \end{array} \right.$ geol
arch
sex

- VIII. 11" I see two bears. And they look like they're trying to climb a tree to escape from something. Doesn't look like they're succeeding because one paw seems to be slipping. Top part looks like a fir tree. Bottom looks like two snails . . . in the middle of the two snails it looks like the top of a penis.

D $\left\{ \begin{array}{l} FM \\ FC \end{array} \right.$ A tree P

D $\left\{ \begin{array}{l} F \\ F_{\pm} \end{array} \right.$ A sex

- IX. 6" Looks like two witches. Pointing their finger at something. Toward the horizon there.

Green part looks like an Xray. (Q) Guess it could be the pelvis or hip. Very bottom of the green part — where its pink — looks like two thumbs . . . one on either side — might be holding the pelvis up.

Pink part looks like the color of coral — but its not the shape of coral.

D $\left\{ \begin{array}{l} (M) \\ F_{\pm} \end{array} \right.$ (H) N

B $\left\{ \begin{array}{l} CcF \\ M \end{array} \right.$ Hd Xray

D C geol

- X. 8" Pink looks like coral. Animals on either side of the coral looks like a crab. (Q) Trying to get underneath or in back of the coral because something is trying to attack them.

I see spiders. Looks like they're latching on to food — an insect of some sort.

I see two green snakes.

At the top (sighs) . . . It looks like some kind of an underwater creature with antennas. Looks like they're latching on to . . . Could also . . . look something like a penis. Seems like the insects the spiders are trying to catch are going toward the same thing.

D $\left\{ \begin{array}{l} CF \\ FM \end{array} \right.$ geol A

D $\left\{ \begin{array}{l} FM \\ F_{\pm} \end{array} \right.$ A food P

D FC A

D $\left\{ \begin{array}{l} FM \\ F \end{array} \right.$ A sex

<i>W</i> = 4	<i>M</i> = 4	<i>A</i> = 12	<i>R</i> = 26
<i>WS</i> = 1	<i>M±</i> = 1	(<i>A</i>) = 1	<i>P</i> = 4
<i>D</i> = 20	(<i>M</i>) = 2	<i>Ad</i> = 1	airt = 11.9
<i>Dr</i> = 1	<i>mF</i> = 1	<i>H</i> = 2	<i>W:D</i> = 5:20
	<i>FM</i> = 9	(<i>H</i>) = 2	<i>W:M</i> = 5:7
	(<i>FM</i>) = 1	<i>Hd</i> = 2	<i>FM:M</i> = 10:7
	<i>Fc</i> = 1½	sex = 7	$\Sigma C:M$ = 7:7
	<i>cf</i> = 1½	blood = 2	$\Sigma C:\Sigma c$ = 7:3½
	<i>F</i> = 8	app = 1	<i>FC:CF:C</i> = 3:4:1
	<i>F±</i> = 6	obj = 1	<i>A%</i> = 54
	<i>FC</i> = 3	emb = 1	
	<i>CF</i> = 4	thing = 1	<i>F%</i> = 54
	<i>C</i> = 1	geol = 3	<i>F+%</i> = 57
		arch = 1	
		tree = 1	
		<i>N</i> = 1	
		xray = 1	
		food = 1	

Note: Scored after Piotrowski.

REFERENCES

- Beck, L. F. *Unconscious motivation*. University of Oregon: Associated Films, 1949.
- Bergmann, M. S., Graham, H., & Leavitt, H. D. Rorschach exploration of consecutive hypnotic age level regressions. *Psychosomatic Medicine*, 1947, 9, 20-28.
- Counts, R. M. & Mench, I. N. Personality characteristics in hypnotically induced hostility. *Journal of Clinical Psychology*, 1950, 6, 325-330.
- Lane, Barbara M. A validation test of the Rorschach movement interpretation. *American Journal of Orthopsychiatry*, 1948, 18, 292-296.
- Levine, Kate N., Grassi, J. R., & Gerson, M. J. Hypnotically induced mood changes in the verbal and graphic Rorschach, a case study. *Rorschach Research Exchange*, 1943, 7, 130-144.
- Mercer, Margaret & Gibson, R. W. Rorschach content analysis in hypnosis: chronological age regression. *Journal of Clinical Psychology*, 1950, 6, 352-358.
- Sarbin, T. R. Rorschach patterns under hypnosis, *American Journal of Orthopsychiatry*, 1939, 9, 315-318.
- Sarbin, T. R. & Farberow, N. L. Contributions to role-taking theory: A clinical study of self and role. *Journal of Abnormal and Social Psychology*, 1952, 47, 117-125.
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Classroom Behavior And The Body Image Boundary

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Summary: In three different groups of boys boundary definiteness was related to the effectiveness of the boys' classroom behavior. In emotionally disturbed boys it was correlated with the teachers' reports of how much difficulty the child had in adjusting to the classroom. In normal fifth and sixth graders, it was correlated positively with teachers' ratings of classroom effectiveness. Teacher ratings of maturity behavior of the group of first grade boys was also significantly related to boundary definiteness. The results indicate that boundary definiteness is a significant generalized predictor of classroom behavior. The boy who has a clear sense of his boundaries and his demarcation from others behaves effectively in the school environment.

A measure derived from responses to ink blot percepts has been developed which measures degree of body boundary articulation (Fisher and Cleveland, 1958). The Barrier score, as it is called, is a sum of the individual's responses to a series of Rorschach blots which emphasize the containing and bounding qualities of the percepts. The Barrier score refers to the way in which an individual perceives his own personal periphery or limits. It is a representation of the degree of boundedness the person experiences as characteristic of himself. Various studies have shown that boundary definiteness is associated with achievement drive and with goal determined, self-steering behavior. One study (Fisher and Cleveland, 1958) demonstrated the relationship between clear boundaries (as defined by Fisher-Cleveland score) and achievement level in terms of classroom behavior. It was found that individuals who volunteered to do a term paper to raise their grade were predominantly well-bounded Ss. Another study (Fisher and Cleveland, 1958), also using college students as Ss, demonstrated the boundary score to be positively correlated with *n* Achievement (McClelland, Atkinson, Clark, & Lowell, 1953). Shipman (1965) reported that achievement drive, as measured by the number of achievement words from Gough's Adjective Check-list which Ss chose as self-descriptive was significantly correlated with the Fisher-Cleveland boundary score. However, no relation was found between boundary definiteness and the Achievement dimension of the Edward's Preference Schedule.

There have been few studies which have concerned themselves with the rela-

tionship between boundary attributes and behavior in children. In one study of school children, Fisher (1966) found that boundary definiteness did predict achievement drive as defined by school attainment (a weighted score taking grades and IQ into account) in both sexes. However, a detailed analysis indicated that the relationships between the boundary and achievement variables were different for the two groups. In boys definite boundaries were accompanied by high achievement in school and also by forceful, achievement oriented traits, as defined by teachers' ratings. Both academically and socially the well-bounded boy behaved in a manner associated with a high achievement orientation. Boundary definiteness in girls was associated with high achievement in academic behavior but not with general trait behavior by the teacher. Difficulties in relating academic achievement in girls to more general achievement traits has been encountered in other research (French & Lesser, 1964; Lesser, Kravitz, & Packard, 1963; Veroff, Wilcox, & Atkinson, 1953).

The objective of the present study is to investigate the relationship of boundary definiteness to various levels of effectiveness in classroom situations in three different groups of boys.

Method

Subjects

Three groups of elementary school-aged white boys in the Syracuse Public Schools were evaluated:

Group I consisted of 14 boys in the first grade.

Group II consisted of 30 fifth and

sixth grade boys in the regular public school classrooms.

Group III consisted of 34 emotionally disturbed boys referred for special classroom placement because of their extremely disruptive behavior in school. They comprised two subgroups within the special classrooms:

(a) those considered by the teachers as too disruptive even for the special classes.

(b) those selected by the teachers as noticeably improved or as sufficiently improved to return to normal classrooms.

Procedure

1. All of the children were administered a 20-response ink blot test. The Barrier score, as developed by Fisher and Cleveland (1958), was obtained for each test series. Ss in Groups I and III were administered the series of ink blots on an individual basis. Ss in Group II were administered the ink blot series in their regular classrooms on a group basis. A total of 20 responses was required for each child. To arrive at this total the boys were asked to give two responses to each of the standard Rorschach plates. The same procedure was followed for both group and individual administration. The responses were categorized according to the Fisher-Cleveland Barrier scoring procedures. The greater the number of Barrier responses the greater is the implied definiteness of the body-image boundary. The scoring system used has been shown to have high interjudge agreement. Generally, this agreement has been in the high .80's and low .90's (Fisher, 1963). Furthermore, adequate test-retest reliability has been demonstrated. Detailed scoring norms may be found elsewhere (Fisher and Cleveland, 1958).

2. The Group I classroom teachers selected from a list dealing with maturity vs. immaturity those adjectives (Gough, 1960) which best described each child. The adjectives described behaviors which would be considered mature, e.g., alert, responsive, capable, independent, reliable, logical, self-controlled, organized, mature, dependable. Adjectives associated with immature behavior were: apathetic, con-

fused, careless, unstable, distractable, whiny, infantile, unrealistic, dependent, passive. Adjectives chosen by the teacher were assumed to represent the boy's typical mode of response in his relationships with her.

The Group II classroom teachers were asked to select 10 out of 20 adjectives listed (Gough, 1960) which she felt were most characteristic of the child's behavior. Ten adjectives described the outlook of the highly effective child: inventive, industrious, enthusiastic, determined, ingenious, forceful, enterprising, energetic, efficient, dissatisfied; and ten described traits indicative of ineffectiveness, e.g., dependent, lazy, forgetful, easy going, infantile, irresponsible, slow, simple, slipshod, unambitious. The number of adjectives checked by the teacher falling in the effectiveness category was counted. The sum was taken to indicate degree of effectiveness in the classroom setting.

Teachers of Group III prepared lists of boys whom they considered most troublesome and difficult to manage even in the special classroom. This list was made up of boys whom the teachers felt could not be contained even under the special conditions set by the special class. A second list was prepared by the teachers of boys whom they felt had shown significant improvement in their behavior and an increased interest in learning.

Results

In all three groups the Barrier score predicted the classroom behavior criterion. A well-defined personal boundary was significantly related in a positive fashion to effectiveness, maturity, and ability to behave in a controlled fashion in the classroom.

For Group I, the degree to which the teachers described boys as behaving in a mature fashion was significantly and positively related ($X^2 = 4.4$ [with Yates correction], $N = 14$, $p < .05$) to the degree to which they had a clear concept of their own body boundaries.

In Group II, the degree to which teachers described the boys as behaving in an effective fashion was significantly and positively related ($X^2 = 11.1$, $N = 30$, $p < .001$) to the degree to which they had a

clear concept of their own body boundaries.

In Group III teachers' groupings of the boys into the improved versus unmanageable categories were significantly and positively related ($X^2 = 11.3, N = 34, p < .001$) to the degree to which they had a clear concept of their own body boundaries. Thus, of the 22 boys listed by the teachers as unable to learn self-control, 20 lacked differentiated boundaries as measured by the ink blot Barrier score.

Discussion

A boy's personal boundary, as reflected in the ink blot Barrier score, was significantly related to behaviors considered contained and goal directed in the formal classroom setting. Recently Fish (1960) found a relationship between maturity as measured by the figure drawings of grade school children and the Barrier score: the more definite the child's boundary, the more mature the figure-drawing representation. In another study Swartz (1965) found that high anxious children had lower Barrier scores than low anxious children.

The poorly controlled behavior in the classroom of the low-Barrier disturbed child is paralleled by Megargee's (1965) observations. He found a similar relationship when he studied the aggressive behaviors of delinquent teenagers. He noted their lack of control to be related in a significant fashion to lack of boundary differentiation. Lack of control in delinquents was related to poor delineation of boundaries. In still another recent study (Leeds, 1965), delinquents were compared with a carefully matched sample of normals. The comparison revealed the delinquents had a significantly poorer sense of body demarcation. A program intended to increase the accuracy of one's body perception has been developed by Frostig (Frostig and Horne, 1964). She related increase in accuracy of body perception to improvement in school learning ability.

Generally then, the child who behaves in a self-contained goal oriented fashion tends to have a definite boundary.

REFERENCES

- Fish, J. E. An exploration of developmental aspects of body scheme and of ideas about adulthood in gradeschool children. *Unpublished doctoral dissertation*, University of Kansas, 1960.
- Fisher, R. Body boundary and achievement behavior. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 435-438.
- Fisher, S. A further appraisal of the body boundary concept. *Journal of Consulting Psychology*, 1963, 27, 62-74.
- Fisher, S. & Cleveland, S. *Body image and personality*. Princeton, New Jersey: Van Nostrand, 1958.
- French, E. G. & Lesser, G. Some characteristics of the achievement motive in women. *Journal of Abnormal and Social Psychology*, 1964, 68, 119-128.
- Frostig, N. & Horne, D. *The Frostig Program: For the development of visual perception*. Chicago: Follett Publishing Company, 1964.
- Gough, H. G. The adjective check-list as a personality assessment research technique. *Psychological Reports*, 1960, 6, 107-122.
- Heilbrun, A. B. Sex role identity and achievement motivation. *Psychological Reports*, 1963, 12, 483-490.
- Leeds, D. T. Personality patterns and modes of behavior of male adolescent narcotic addicts and their mothers. *Unpublished doctoral dissertation*, Yeshiva University, 1965.
- Lesser, G. S., Kravitz, R. N., & Packard, R. Experimental arousal of achievement motivation in adolescent girls. *Journal of Abnormal and Social Psychology*, 1963, 66, 59-66.
- McClelland, D., Atkinson, J. W., Clark, R. A., & Lowell, E. L. *The achievement motive*. New York: Appleton Century Crofts, 1953.
- Megargee, E. Relationship between barrier scores and aggressive behavior. *Journal of Abnormal Psychology*, 1965, 70, 307-311.
- Shipman, W. Personality traits associated with body-image boundary concern. Proceedings of the 73rd annual convention of the American Psychological Association, 1965.
- Swartz, J. D. Performance of high and low anxious children on the Holtzman ink blot technique. *Child Development*, 1965, 36, 569-575.
- Veroff, J., Wilcox, S., & Atkinson, J. W. The achievement motive in high school and college women. *Journal of Abnormal and Social Psychology*, 1953, 48, 108-119.

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***M* an Active Energy System Correlating Rorschach *M* with Ease of Creative Expression**

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Summary: The hypothesis under evaluation was that persons giving a larger number of *M* responses (minimum 5) would show greater ease in expressing themselves creatively than a group of persons giving low *M* in the Rorschach (0 to 2). Groups were matched on variables of age, education, and socio-economic status. Twenty-two high *M* and 21 low *M* persons were tested for creative expression by means of written and verbal TAT, drawings and Lowenfeld Mosaic Designs. Ability to be creatively expressive for high as compared to low *M* Ss was very great, reaching significance levels beyond .001 on all tests. Flexor and extensor quality of *M* appeared to be unrelated to ease of creative expression.

Rorschach repeatedly refers to *M* as "inner creation," a tendency of the individual to turn in upon himself, to have little to do with the world of reality, to create a world of his own values. It is this emphasis which has led to the consideration of *M* as the fantasy life of the individual, with the implication that it stands for the un-lived out tendencies and wishful dreams of the individual. Beck (1962) in fact considers it an ego defense mechanism through which the individual withdraws into a world of fantasy when reality becomes too unpleasant. However, Rorschach (1951) also made other statements which give *M* a very dynamic quality. For example, in the *Psychodiagnostics*, he states, "Subjects who see extension movements are active individuals with a strong drive to self-assertion, though they often show neurotic inhibitions. Those who see flexion movements are passive, resigned, neurasthenic individuals [p. 29]." Later he states, "The question of what these individuals in whom *M* predominates actually produce is not pertinent at this time. It is simply a fact that something will be produced [p.75]."

This concept of a "propulsive" quality to the *M* is comparable to Piotrowski's (1957) definition of *M* as "concept of role in life." The implication is that the individual lives according to his role in life, not merely fantasies about it. His definition of *M* clearly refers to a kind of psychic energy present in the *M* which expresses itself in the way the individual perceives the world, structures it and relates to it.

Thus, *M* is here given an active, not a purely fantasy function. It is a powerful

energy system for transforming the conventional aspects of the world into a personal vision and for acting upon the world according to this personal vision. It is a system impelling or propelling the individual to some kind of individual expression. Moreover, the concepts of making individualized constructs, of a more individualized intelligence, of less adaptability to reality, all of which are postulated by Rorschach himself as characteristics of the *M* type of individual, imply an active not a passive approach to life and give *M* an active expression-seeking quality.

In this study, the assumption is that quantity of *M* and introversive *Erlebnis*-type are more important factors in determining whether persons will be impelled to some form of self-expressive action than the extensor or flexor quality of *M*. However, for the purposes of this study, it is also assumed that considered by itself, flexor *M* has a lesser degree of psychic energy, a lesser tendency to propel to action, a lowered capacity to express outwardly individualized constructs and therefore less actively used creative power. Given equal numbers of *M*, the person with more extensor *M* is expected to have more actively expressive creative power, that is, more energy with which to create than the basically flexor *M* type of person. Persons with many *M* in their records, whether they habitually use this energy creatively, reproductively or receptively, or purely as an escape into fantasy from the realities of the world, should be capable of self-expressive productivity through various expressive media, such as graphic, verbal or written forms, if the request for this kind of expression is made

and if the circumstances are set up to elicit it. One would expect ease of expression to vary to some extent in different media, depending on the presence of individual talent or combination of talents.

In considering the tendency of M to find active expression in art or behavior it is necessary to consider also the production of whole responses (W) in the Rorschach. Rorschach (1949) defined W as the "conscious willing to make complicated performances [p. 64]." Moreover, he states that the "same dispositional energy which is the origin for large numbers of W responses must also be the origin for M responses [p. 64]," and the M and W are generally in proportion to each other in the individual record.

In a high M record without an adequate number of W we would assume that some kind of short circuit is present in the system. It would seem, in that case, that M might not have sufficient driving energy by itself to find or seek active expression—no "will" to do so. What the precise relationship between W and M is, was not clear to Rorschach; but presence of much W is an indication that potential energy in M or in other systems of the psyche is being expressed in some form in the person's life. How effectively he does it depends on many factors, a very important one of which is the form level of his responses.

As a check on the thesis that it is creativity we are measuring through the M , it is assumed that persons with zero or only a few (not more than two M) will have difficulty in expressing themselves creatively, while persons with many M , whether artists or not, will have relatively little difficulty in expressing themselves creatively on tasks attempting to elicit this ability. The action tendency of the M , i.e., its flexor or extensor quality, is theoretically related to the ease with which persons with M will be expressive. The more extensor and positive the quality of the M , the more likely it is to find expression; that is to say, individuals with extensor, good quality M , will find it relatively more easy to express themselves through imaginative media than individuals with flexor or blocked quality M in their Rorschach records.

Method

Zero to two M was defined as low M productivity, while five M or more was the criterion for high M productivity. It was necessary to test a very large population in order to obtain two groups which could be equated for age, educational status, and where possible, I.Q.'s (WAIS) were obtained. In some cases the S 's professional status was taken as a rough indication of his intellectual level. It was impossible to control the groups for number of responses without using an artificial criterion such as limiting production. It was felt that this would conceal the true differences between the groups seriously as "fluency" has been shown to be a factor in creativity (Guilford, 1957).

Subjects

High M Group

This group comprises 22 subjects all of whom were employed and reasonably well functioning in the community. However, 18 of these persons were in some form of therapy (14 in private psychotherapy, 4 in clinics). The mean educational level of the group was 12.7 years. The occupational status may be described as follows: there were 7 professional persons; 4 business executives; 5 sales and clerical; 3 housewives; 2 students, and 1 other occupation. There were 13 men and 9 women in the group. On the basis of obtained WAIS I.Q. and estimates of intelligence based on professional level, the mean group I.Q. was computed as 122. Mean age was 33.2.

Low M Group

This group comprises 21 subjects matched as closely as possible with the high M group in relevant variables of occupation, education, I.Q. and therapeutic status. Fifteen of the 21 patients were in some form of therapy (8 in private therapy, and 7 in clinics). The occupational status may be described as follows: there were 7 persons in the professions; 3 business executives; 3 sales and clerical; 3 housewives; 3 technicians; 1 teacher; 1 pilot and 1 under miscellaneous occupations. There were 14 men and 7 women in the low M group. On the basis of ob-

tained WAIS I.Q. and estimates of intelligence based on professional level, the mean I.Q. was computed as 120. Mean age was 33.1.

Table 1
Rorschach Distributions for High and Low *M*

	High <i>M</i> ^a		Low <i>M</i>	
	16		1	
Introversive	2		11	
Extratsensive	4		9	
Ambi-Equal	35.4	% of <i>R</i>	19.3	% of <i>R</i>
<i>R</i>	8.7	24.	7.6	40.
<i>W</i>	8.8	25.	1.3	6.7
<i>M</i>	4.9	14.	3.0	15.
Sum <i>C</i>	13.7	37.	4.3	22.
<i>M</i> + Sum <i>C</i>	6.4	18.	3.0	15.
<i>FM</i>	29.0	29.	42.7	42.7
<i>F</i> %				

^a Using criterion of *M*: sum *C* of 5:5 or more 11 high *M* Ss showed dilated experience balance.

The Rorschach psychograms for the high and low *M* groups (See Table 1) differ markedly in distribution, in spite of the fact that groups were carefully matched on variables of socio-economic status, education, age, intelligence and therapeutic status. It was virtually impossible to find low *M* persons with long and dilated Rorschach records. The disparity in psychogram distributions is an undesirable side-product of matching according to the criterion of high and low *M* and was overlooked until analysis of data revealed it. The greatest discrepancy between the groups appears to be in *M* with the high *M* group producing 4 times the number of *M* found in the low *M* group.

Procedure

Several projective techniques were chosen as measures of the individual's capacity to express himself through creative media. This choice was made because as an unstructured situation with no external supports, projective techniques offer an excellent stimulus for creative projection. The *S* must structure and interpret the elements of the situations according to his own inner imaginative nature and according to his capacity to understand and to enter into such situations.

The following projective techniques were chosen on the assumption that they are able to clearly elicit an imaginative use of the stimuli: TAT, Figure Drawings, and Mosaic Patterns. These three different tests offer essentially different ways of self-expression—i.e., they involve different media. This takes into account the possible fact that a person may be gifted in one area and so express himself well in it without demonstrating a general ease in creative expression. Our basic assumption, however, is that a person with many *M* will find it relatively easy to express himself in all media, quite apart from any specific talent in which he will do especially well.

The TAT can be used as a means of testing two different types of media for expression (verbal and written) even though it presents only one type of stimulus. While the stimulus is semi-structured since the pictures clearly represent people, the situations are unclear and relatively unstructured. The person is free to be imaginative in making up his stories.

The second test called for four separate drawings of each of the following: a human figure, a house, a tree, and an animal. The problem of skill in drawing was actually not important. The instructions were to draw four different persons (houses, trees, animals) on the same page.

The house, tree and animal lend themselves very well to imaginative expression since there are a variety of houses, trees and animals which can be drawn.

The third test—the Lowenfeld Mosaic Test—calls for skills different from the verbal, written or drawing media. Neither content nor form was suggested or asked to be produced for the majority of Ss. This medium contains more “novelty” than the TAT and drawings. The Ss were therefore thrown more on their own inner resources.

The instructions to the Ss were as follows:

MOSAICS: “There are colored tiles of different shapes and sizes. You see (demonstration of shapes and naming of colors). I am going to ask you to make a design using these tiles, choosing as many or as few as you wish and using any or all of the colors as you wish. You can make any kind of design.”

After the completion of each design the S was asked to do “one more.” When the person finished each design, he was asked “what would you call this design?”

FREE DRAWINGS: The Ss were asked “Draw four different people on this page” and when this was completed, “Draw four different houses (trees, animals).”

TAT: The Ss were told “I am going to show you some pictures of people. I want you to make up a story about them.”

Scoring of TAT

Weisskopf's transcendence scale was used for scoring the TAT. This is a scale which has already established its usefulness and objectivity. It was used without the later modification by Weisskopf with respect to simple and compound sentences. That is, simple sentences were scored for more than one transcendence if more than one transcendence occurred. All scoring was done by the author the first time, then by the author in collaboration with a second judge. The abba sequence was followed in scoring the cases. Stories two and ten were scored independently by two other judges in order to check on reliability of scoring.

Spearman r between judgments was between .90 and .97. Differences in scoring between the author and the second

judge were settled by a joint discussion of the problem. One other judge, an expert in the use of the Weisskopf transcendence scale (Dr. E. Weisskopf) was available for the scoring of Card 2. Spearman r was between .83 and .97 (p . .01) on the various cards.

Scoring of Drawings and Mosaics

Scoring system A. A “blind” identification method was followed on the assumption that if any differences existed between the drawings and mosaics productions of the low and high M groups, these would show up. The drawings (or mosaics) of the low and high M groups were mixed together. The judges were given the following instructions: “This is a randomly mixed group of drawings (or mosaics) done by two different types of people. One group is done by persons with very little or no imagination. They are what we call “uncreative” people who have difficulty in being imaginative. The other group is done by people who have a great deal of imagination. They are called “creative” people and you should be able to see their greater ability to be imaginative, fresh and original in the way they make their drawings (or mosaics). Pick out the drawings (or mosaics) that you think were done by the creative group and those you think were done by the unimaginative group.” The judges were shown two examples of creative and two samples of uncreative drawings (or mosaics) of Ss who were not used in this experiment. Most of the judges did not ask if the groups were of the same size. Of the few who asked, they were told, “more or less—do not worry about that, just select the ones you think look creative and the ones you think look uncreative or unimaginative.”

The samples of drawings and mosaics were collected over a number of years. They were selected on the basis of relevant criteria from a population much larger than the one used in this project. The products were no longer familiar to the author and she could act as one of the judges without much fear of unconscious bias. Besides the author, seven

other judges were used. The judges for the drawings and mosaics were two psychologists (besides the author), and 5 persons unfamiliar with these mosaic and drawing techniques. They consisted of 3 artists, (a writer, a sculptor and a ceramist) and two psychiatric social workers.

Scoring system B. Both the drawings and the mosaics were rated on a *five point scale* by the author and independently by one other judge. Spearman r was between .64 and .79 (p .01). The final score consisted of a judgment made by agreement between the two judges, sometimes in the direction of a compromise score. A record of the cases on which errors were made was kept for six of the eight judges for the drawings and seven of the eight judges for the mosaics. There was considerable agreement in the errors made by the different judges.

Scoring of M Activity

To test the hypothesis that the more extensor the quality of the M , the greater

will be the ease of expression through creative media, each M was scored for its activity value. The range was from minus 2 for pronounced flexor quality to plus 4 for pronounced extensor quality. The sum of the total activity scores constitutes the activity score. Obviously the higher the number of M the higher the activity score. To control for this fact the activity score was divided by total number of M .

Results

Table 2 presents the data for the high M and low M groups respectively. The scores are presented separately for each test, i.e., 1) verbal TAT, 2) written TAT, 3) drawings (point scale evaluation), 4) mosaics (point scale evaluation) and combined creativity score comprising all 4 scores. In the combined creativity score the TAT transcendence scores were averaged (total score divided by total number of cards); line 7 of Table 2 refers to the total activity score of M and line 8 refers to the averaged activity score (18.1 divided by 8.8).

Table 2
Mean Creativity Scores for TAT, Drawings and Mosaics

	High M	Low M
Total M	8.8	1.3
Verbal TAT	55.5	29.7*
Written TAT	51.1	25.9*
Drawings	3.4	1.9**
Mosaics	3.9	2.0**
Creativity (combined)	29.2	14.8*
M Activity (total)	18.1	2.9
Controlled M Activity	2.0	1.8

* Mann-Whitney U test p .00003

** Chi square p .001.

The Mann-Whitney U Test was applied to the combined creativity score and both TAT scores. It yields a z of 44.0, significant at better than .00003 level for all three measures. The results of scoring system B, i.e., the 5-point scale, are given in

Table 2. The chi square test was applied to these two tests using a division of scores into high and low. Scores of 1 to 3 were considered as low scores and scores of 4 to 5 were considered as high scores. The difference between the high M groups is

significant at $p .001$ with chi square of 10.4 and 11.0 respectively for drawings and mosaics respectively. There is obviously no difference in the averaged activity scores of the high and low M groups.

The combined written and verbal TAT mean is 107 for the high M group and 55.3 for the low M group. The highest transcendence score in the low M group is below the mean of the high M group, while only two S s in the high M group score below the mean of the high M group. For the drawings all 21 of the low M S s placed in the 1-3 category of form level rating. In the high M group differentiation was more difficult. Eleven subjects placed in the 1-3 form level category and 11 placed in the 4-5 form level category. The difference between the two groups was significant at the $p .001$ level ($\chi^2 10.4$). For the mosaics, 17 out of 21 low

M S s placed in the 1-3 form level category. One S refused to make any designs. In the high M group 15 out of 22 S s scored in the 4-5 form level category and 6 in the 1-3 form level category. Difference between the high and low M groups is significant at $p < .001$ ($\chi^2 11.0$).

Scoring System A for Drawings and Mosaics

This system involved blind differentiation of creative products. For drawings, 6 out of 8 judges were able to distinguish the drawings of the high M from the low M S s at levels of significance between $p .05$ and $p .001$ (See Table 3); while for mosaics, 7 out of 8 judges succeeded in discriminating the mosaics of high M from low M S s at levels of significance between $p .05$ and $.001$.

Table 3
Number of Cases Identified Correctly By Independent Judges

Total $N = 41$						
Judge	Drawing	Chi Sq.*	P	Mosaic	Chi Sq.*	P
1	31	7.5	.01	32	11.8	.001
2 ^a	33	11.2	.001	30	7.9	.01
3	31	7.5	.01	29	6.2	.02
4	29	4.5	.05	28	4.7	.05
5	26	1.4	.3	28	4.7	.05
6	28	3.3	.1	33	14.0	.001
7	30	5.9	.05	39	26.8	.001
8	29	4.5	.05	26	2.4	.2

*A chi square of 3.8 is significant at .05 level. All chi squares were corrected for continuity.

^aAuthor's judgment.

In addition to an analysis of the relationship of M to creative expression, the Rorschach variables of R , W , sum C , and $M+\Sigma C$ were analyzed to examine the possibility that determinants other than M were highly related to creative expression (See Table 4). Table 4 summarizes the findings presented independently for high M group (HM) and low M group (LM). A combined group of high and low M subjects (CM) is also presented. If the high and low M groups are examined inde-

pendently for the contribution of R , M , W and color, it is evident that total number of R and color are not related to creative expression in either high or low M groups as measured in this study, while W is related to creativity only in the high M group. W production for high and low M groups was 8.8 and 7.6 respectively. Nor is the combination of movement and color related to creativity in the low M group, although it is related to creativity in the high M group. When the high and

low *M* groups are combined, *R*, *W*, *M* and sum *C* naturally show a relationship to creativity by virtue of the great discrepancy between the two groups of *Ss* on all of these variables. The activity score is negatively although insignificantly related to total creativity, TAT and drawing scores but is negatively and significantly related

to mosaic scores in the high *M* group. The reason for this is not obvious.

It would appear then that only quantity of *W* and *M* are significantly related to ease of creative expression as was postulated by Rorschach. The original hypotheses appear to be supported in the present research sample of *Ss*.

Table 4
Correlation of Creativity Scores With Rorschach *M*, *R*, *W* and Color

	Total	Verbal	Written	Drawings	Mosaics
	Creat.	TAT	TAT		
<i>HM</i>	.42*	.39	.49*	.41	.36
<i>LM</i>	.48*	.07	.21	.02	.38
<i>CM</i>	.68**	.61**	.61**	.60**	.61**
<i>HR</i>	.21	.38	.23	.06	.18
<i>LR</i>	.27	-.13	.40	.00	.21
<i>CR</i>	.50**	.52**	.46**	.34**	.46**
<i>HW</i>	.54**	.32	.63**	.35	.46*
<i>LW</i>	-.03	-.17	.06	-.22	-.11
<i>CW</i>	.35*	.23	.43**	.18	.14
<i>HC</i>	.33	.37	.28	.00	.09
<i>LC</i>	-.07	.00	.01	-.07	-.38
<i>CC</i>	.29	.34*	.28	.07	.02
<i>HM+C</i>	.58**	.56**	.59**	.33	.34
<i>LM+C</i>	.02	.03	.08	-.08	-.23
<i>CM+C</i>	.72**	.69**	.65**	.54**	.53**
<i>H Activ.</i>	-.13	-.12	-.18	.07	-.45*
<i>L Activ.</i>	.01	-.09	.19	.02	-.13
<i>C Activ.</i>	-.27	-.26	-.14	-.17	-.37*

Significant correlations: High *M* group *r* .42 for *p*.05*; *r* .54 for *p*.01**. Low *M* Group: *r* of .43 for .05; *r* of .54 for .01; comb. group: *r* of .30 for .05; *r* of .39 for .01.

Qualitative Analysis of the TAT

Qualitative analysis of the TAT, drawings and mosaics is added in support of the basic differences found by more objective scores in this sample of high and low *M* *Ss*. Qualitatively there was little difficulty in knowing which of the TAT stories belonged to the high *M* group and which to the low *M* group; the main difference lay in the much richer imagination of the high *M* group and the greater spontaneity and complexity of elaboration. Themes and relationships were more varied.

Qualitative Analysis of Drawings

It is difficult to describe the qualitative differences in precise terms. There was, first of all, a great difference in form level, with the high form levels occurring almost exclusively in the high *M* groups. As with the mosaics, there was some overlap, but on the whole the differences were striking. The form level differences may also be described in more vague terms as a quality of a much greater artistic talent in the high *M* group. Since the groups had been roughly equated for IQ and socio-

economic status, the differences cannot be due to these factors. The high *M* group was simply an artistically more "talented" group. This talent is difficult to describe except in terms of greater diversity, greater imaginativeness of the drawings, and a more artistic organization on the page. The high *M* group seldom left drawings unfinished or was at a loss to make four different drawings of each category whereas in the low *M* group this was not uncommon.

Qualitative Analysis of Mosaics

From a qualitative standpoint, the mosaics of the high and low *M* groups showed startling differences. While there was some overlap between groups, generally the majority of the high *M* mosaics were readily distinguishable from the low *M* mosaics. This was seen primarily in a very dynamic quality, a high degree of originality, and much use of space between the mosaic pieces. The mosaics of the low *M* group showed a static quality, were compact, crowded and generally with an unpleasing emphasis on symmetry and a much less frequent use of space between the mosaic pieces. The quality was one of compulsivity of a lack of spontaneity, with an absence of the dynamic quality that the high *M* mosaics showed. The group as a whole seemed to show more repression. The organization of the page and in the internal order of the patterns was poorer for the low *M* group and the diversity was lower. The patterns tended to look alike even when the design was intended to be different. The *Ss* of both groups were asked to label their designs. The verbalization or labelling was much poorer in the low *M* group. The label, "It's just a design" occurred much more frequently in the low *M* group, whereas the high *M* *Ss* seldom used this label, and often gave abstract titles. The form level was generally lower in the low *M* group.

Discussion

It is clear that we are dealing with people differing significantly in both the Rorschach psychogram and in their ability to be creatively expressive when groups are selected on basis of *M* production.

Since these groups have been reasonably well-matched in terms of IQ, age, socioeconomic variables and professional status, it seems fair to infer that the differences in creativity are related to higher *M* and perhaps also to the different psychodynamic structure suggested by the Rorschach protocols. Even a cursory analysis of the different Rorschach psychograms of the low and high *M* groups reflects a significant difference in the kind and amount of repressive controls which the groups use in dealing with inner impulses and with reality. The high *M* group is obviously much less inhibited, less rigidly controlled, more spontaneous, and more free to draw on fantasy in handling of inner impulse and outer reality as is evidenced in the high *R*, high *M*, higher color production, lower *F*%, and higher shading response.

A short Rorschach record, obtained from a middle-class, reasonably adequately functioning, employed individual, containing a paucity of determinants, low *M*, high *A*%, relatively high *F*% and an adequate number of *P* responses characteristically indicates a personality structure which makes high use of repressive mechanisms and which may be described as constricted. The thinking reflected by such a record is likely to be stereotyped and conventional. The low *M* group in this study approximates this type of personality description. The diagnosis of depression is warranted off only by the presence of adequate *W* and adequate color projection. The psychogram of the high *M* individual reveals personality dynamics that are markedly different in many important areas—but particularly in the use of projection as opposed to repression as a defense mechanism. It may be that high *M* production is significant for creativity not merely as an index of fantasy, but as a correlate of a different psychodynamic system in the elaboration or organization of which use of fantasy is the cornerstone.

Summary

On the basis of the findings of this research we can make the following statements in relation to our original hypothesis:

1. From the definition of *M* as creative

imagination, persons with many good or adequate M in their records (5 or more) and adequate numbers of W , find it relatively easy to express themselves creatively through projective media (TAT, Mosaic and Drawings) given an opportunity for self-expression; while persons with zero, or few M (2 or less) with or without adequate W will have difficulty in expressing themselves in all such media when the request is made of them to be self-expressive.

2. The quality of M , its extensor or flexor quality, is not related to degree and ease of self-expression through the media of TAT, Mosaic and Drawings.

More specific statements may be made as follows:

1. Persons giving high numbers of M in their Rorschach find it much easier to express themselves creatively than persons giving low M in all three media used in this study, i. e., TAT, Drawings and Mosaics.

2. There is no relationship between extensor quality of M in all three media used of creative expression.

3. Quantity of M is significantly correlated and quantity of W tends to be significantly related to ease and degree of creative expression in the high M group; the more M and W , the greater the ability to be expressive through the creative media used in this study. This relationship does not hold for the low M group.

4. Sum C is not significantly correlated with ease of creative expression, in either the high or the low M groups.

5. M plus sum C is correlated with ease of creative expression in the high M group but correlation is zero in the low M group.

6. Ease of creative expression is not significantly related to number of responses in either the low or the high M groups.

7. Both the TAT and the total creativity scores are much more significantly correlated with M plus sum C in the high M group than any other Rorschach variable measured. The correlation between M plus sum C and creativity is zero for both TAT and total creativity score in the low M group. Thus, when M is low or lacking, the M plus sum C ratio is unrelated to creativity.

REFERENCES

- Beck, S. J. *Rorschach's Test*. Vol. 3. *Advances in Interpretation*. New York: Grune & Stratton, 1962.
- Dudek, S. Z. *Rorschach M and Creativity*. Doctoral dissertation, New York University, 1960. Microfilm, Ann Arbor.
- Guilford, J. P. Creative abilities in the arts. *Psychological Review*, 1957, 64, 110-118.
- Lowenfeld, M. The mosaic test. *American Journal of Orthopsychiatry*, 1949, 19, 537-50.
- Piotrowski, Z. A. *Perceptanalysis: A fundamentally reworked, expanded and systematized Rorschach method*. New York: Macmillan Co., 1957.
- Rorschach, H. *Psychodiagnostics*. Berne, Switzerland: Hans Huber. New York: Grune & Stratton, 4th ed. 1949.
- Weisskopf, E. J. A transcendence index as a proposed measure in the TAT. *Journal of Psychology*, 1950, 29, 379-99.
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Correlates of the Mayman Form Level Scoring System¹

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Summary: Four Psychology interns were taught the Mayman Form Level Scoring System. Each intern made judgments on a questionnaire constructed to assess qualities of reality adherence on the scoring summaries of 12 selected Rorschachs. Their judgments agreed 81% of the time with those based on the clinical charts of the patients. The data suggest that the system has merit and that it could and should be utilized in more sophisticated clinical research.

Mayman, in his form level manual (1959), suggests that in the scoring systems now generally used for the Rorschach, form level as a specific score has largely been ignored. The importance of form level as a reflection of personal style and psychological structures has been overlooked in favor of the more popular content categories and classical determinants. Mayman attempts to articulate the cues he has found useful, drawing clinical inferences from qualities of form perception, and tries to integrate these with an ego psychological approach to personality. The result is a measure of the various "modes of reality adherence" rather than the more traditional approaches to form level such as adequacy of judgment, ego strength or intellectual competency and control.

New Rorschach scoring systems, as presented by their authors, promise to provide important new sources of data. When others use these systems, however, they may be disappointed, often finding the inference process the innovator uses insufficiently articulated or the system itself too much a function of the sensitivity, sophistication and experience of its originator. While these factors will always be true to some extent, the value of any innovation depends on its utility for people other than the innovator himself. In this study, we have undertaken to test empirically the utility of one such innovative scoring system.

Problem

The scores in Mayman's system are designed to distinguish among various modes of reality adherence and, by inference, to assess something of an individual's affect life. It should be possible to identify individuals on the basis of their modes of reality adherence and to differentiate them from others with dissimilar qualities. This test of Mayman's system requires a difficult discrimination of subtle psychological processes based only on data from form level scores. If it can be demonstrated that Mayman's scores can make such differentiations, and that these scores are reliably associated with clinical descriptions appropriate to Mayman's concept of modes of reality adherence, then the scoring system can be judged to have considerable utility.

Procedure

Shapiro, in his book *Neurotic Styles* (1965) identifies character styles according to several distinct ways of functioning, including modes of thought, ways of expressing feeling and characteristic behaviors. These descriptions are not so much related to specific symptomatic behavior as to the general style of relating to the object world which can be inferred from a series of experiences reported by patients. A major focus in Shapiro's descriptions is the "style of thinking" which appears to have much in common with Mayman's "mode of reality adherence". Shapiro's characterizations, which derive from a clinical assessment of important aspects of a patient's life, might be inferred from Mayman form level scores, if the scoring system is valid. This present study is an attempt to do just that.

¹ Based on a paper given to a Symposia on Form Level Scoring at the American Psychological Association, September, 1966.

While the interest here is in distinguishing among various modes of reality adherence, and not necessarily the more general question of differentiating diagnostic groups, Shapiro's style descriptions are grouped in ways that are associated with usual clinical diagnoses. Two of the styles that Shapiro articulates are the hysterical style and the obsessive style. Among his other characterizations is a more implicit style that might be called a schizophrenic style. From each of these three stylistic descriptions, four sentences were abstracted that highlighted the outstanding features of thought style or qualities of affect life. Because of the obvious association of these descriptions with diagnostic groups, a fifth statement was added to each group, that of the clinical diagnosis associated with it.

The total group of fifteen sentences, with five sentences for each of the three styles, was regrouped into a multiple choice form. This form contained five sets with three descriptive statements per set. Within each set, one alternative described the obsessive style, one the hysteric style, and one the schizophrenic style. The order of the statements in each set was randomized. This form read as follows:

Set A: 1. Tends to be articulate, directed and critical; 2. Relies on banalities, responding to the immediacy of the situation; 3. Pulled more toward subjective imagery and fantasy.

Set B: 1. Tends to find concentration difficult, can easily shift; 2. Tends to be determinedly rigid and somewhat obstinate; 3. The pull of subjective imagery is so strong that only desperate attempts can be made to reach for finite aspect of reality.

Set C: 1. Feelings tend to be avoided as frightening and threatening and potentially overwhelming; 2. Subjective experience is conspicuously narrowed, lacks spontaneity; 3. Feelings tend to be experienced immediately with little integration to other aspects of functioning.

Set D: 1. Accurate reality perception but with some pull toward subjective imagery; 2. Reality perception is highly colored with fantasy; 3. Is able to accurately perceive reality.

Set E: 1. Predominately hysteric; 2. Predominately obsessive-compulsive; 3. Most likely schizophrenic.

The author taught the Mayman form level scoring system to four advanced psychology interns at the University of Michigan Hospital. Each intern scored the same sample of eight records during a training period. The overall percent agreement in scoring with the author, who has had extensive experience with the Mayman system, was 85. After the protocols were scored, the meaning of the scores in each case was discussed with the interns, using the Mayman manual as the basis for form-level interpretation.

Table 1
Scoring Summary Sheet

Mayman Scores	F (form only)	(additional F determinants)
<i>F+</i>	—	—
<i>Fo</i>	—	—
<i>Fw+</i>	—	—
<i>Fw-</i>	—	—
<i>Fv</i>	—	—
<i>Fs</i>	—	—
<i>F-</i>	—	—

Patient identification number _____

After training the four scorers, twelve clinical records were selected by the author from the files of the University Hospital. These were patients previously unknown to him or to any of the interns. The criterion for inclusion in the research sample was a consensus clinical agreement by the examining team that the patient was either hysteric, obsessive or schizophrenic. This selection was done without reference to the psychological data. Before examining the tests, one sentence from each of the five sets was selected as most descriptive of each patient on the basis of the clinical summaries alone. The author then scored the form level of the

responses in each of the Rorschachs in the sample and prepared a summary according to the Mayman system. For each protocol the summary (shown in Table 1) consisted of two indices for each of Mayman's seven scores, the number of responses that were form only for that score and the number of responses that included a determinant of any kind for that score. Other than an identifying number, this was the only information on the summary sheet.

The judges were then asked to choose one sentence from each of the five sets of statements that would best fit each summary of form level scores.

Table 2
Percentage Agreement and Chi Squares

	"Correct" Matchings Obtainable By Chance Alone	Correct Matchings: All Four Students Combined	Percent Correct	Chi Square	<i>p</i> Value
Set A	16	37	78	27.6	<.001
Set B	16	39	81	33.1	<.001
Set C	16	29	60	10.6	<.01
Set D	16	44	91	49.0	<.001
Set E	16	46	92	52.6	<.001

Results

Each of the four interns completed one multiple choice form for each of the twelve scoring summaries, yielding a total of 48 judgments for each set of sentences. Chance alone would dictate that one-third, or 16 of 48 judgments, would agree with the selection made on the basis of the clinical summaries alone (hereafter called the "correct" judgment). Table 2 summarizes these results.

With one exception the *p* values are at better than the .001 level and that exception is at the .01 level. A further check on the raw data indicates that for each diagnostic group the discrimination was also at the .001 level with no significant difference in the effectiveness of differentiating each group.

Because of the possibility of inter-

correlation between the five sets, it seemed highly desirable to have some measure of relationship between them. For this purpose, Chi Squares were computed measuring the relationship of each item with the other four. Of the ten Chi Squares, none approached significance at the .05 level, with the largest significant at approximately the .30 level.

The size of the Chi Square of both the intercorrelations and the figures presented in Table 2 are conservative because of combining *N*'s to reach a sufficient size for Chi Square (four judges, 12 scoring summaries). This does not affect Table 2 as it would work against positive findings. The size of the Chi Squares for the intercorrelations, on the other hand, are small enough to suggest that even if a positive relationship is present, it is very likely a small one.

Discussion

The data of the present study point to the conclusion that, from form level scores alone, it was possible to identify clinical attributes and diagnostic conclusions with great accuracy. Only those statements bearing on feeling state differences between patients fell below 80% accuracy, but even these clinical observations were none the less predictable with statistically significant accuracy.

While there are a number of points at which one could criticize the data of the present study, it seems highly encouraging that students, with minimal exposure to the form level scoring system, could make inferences from the form level scores alone that agreed 81% of the time with descriptive statements based upon clinical charts of the patients. The form level scoring system does seem to promise a high degree of predictive validity against the criterion of clinical descriptions. The data suggest that the system has merit and that it could and should be utilized further in more sophisticated clinical research.

The directions further research might take would seem to be of at least two

kinds. While it does seem on the basis of articulated theoretical approaches to form level that the Mayman system represents a different approach, it is important to demonstrate the value of these differences in clinical situations. Secondly, research with more sophisticated research designs should be done on the validity of inferences which can be drawn from Mayman's system. A scoring system that can accurately identify thought style in complex clinical data such as that derived from projective testing has potential importance in many areas of research on cognitive processes both within and outside of the clinical setting.

REFERENCES

- Mayman, M. Rorschach Form Level Manual (Dittoed). Menninger Foundation, 1959.
- Shapiro, D. *Neurotic Styles*. New York: Basic Books, Inc., 1965.
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Levels of Cognition and Conscience Typologies

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Summary: A study was made of the relationship between levels of cognition (primary versus secondary process thinking) and types of conscience development (integrated versus non-integrated conscience). A group of college students ($N = 40$) were given the Rorschach Test and a scale of items that measured styles of conscience preference. The Rorschach was scored according to Holt's Pripro methods. The levels of conscience styles were related to the scores of primary process thinking on the Rorschach. The results corroborated the hypothesis that non-integrated conscience is related to the emphasis (on the Rorschach) of primary process thinking. The results were related to the general body of theory in ego psychology.

Introduction

In recent years two notable trends regarding investigative work on ego functions and structure have taken place. One is essentially experimental, having to do with mapping and explicating those ego functions known as cognitive controls (Klein, 1954); the other is fundamentally clinical and theoretical, attempting to explore and understand the functions associated with conscience (or superego) formation and development (A. Freud, 1946, 1965; Sandler, 1960; Schafer, 1960). The basic inference to be drawn from these works appears to be that there is a great need for investigation directed toward understanding the relationships between these two areas in the development of personality as an interacting aspect of behavior and to determine more clearly the regulatory and functional meaning of such structures of personality.

Problem and Theoretical Point of View

Specifically, the intent of the present study was to investigate the relationship between "levels" or "types" of thinking (indicators of primary and secondary process thinking) and certain aspects of conscience development. Before turning to the method, hypotheses and rationale, it is necessary to note the following points of theory generic to this area:

1) Psychoanalytic theory provides a model that distinguishes between primary and secondary modes of cognition, affect, and action. The primary model of cognition was formulated by Freud in 1900. Under this model the dominant drive organizes thinking in terms of wish fulfillment and

immediate gratification of the drive. This model makes it possible to include phenomena like dreams, hallucinations, illusions, daydreams and reveries in the theory of motivated behavior and serves as the foundation for these concepts which in the secondary model of cognition was outlined by Freud. In the secondary model delay prevents the shortcuts of primary thought and detour behavior involving ordered thinking results. These two memory organizations do not predicate two classes of thought, but conceptualize two different aspects of any given thought. The intentional anticipatory potential of thought derives from the directedness of the primary model (Rapaport, 1960).

2) Conscience development has been thought to be a later development of the personality than organized thinking (Piaget, 1932; A. Freud, 1946). A number of studies have cited clinical observations to support the hypothesis that disturbances in the cognitive patterning can affect the development of the conscience (Symonds, 1946; A. Freud, 1965). The converse is the proposition that a rigid or primitive conscience may actually cause distortion of thought processes (Fenichel, 1945; Hartmann, 1950). The whole question of the interaction between organized thinking and conscience development has not been fully clarified by developmental or experimental studies. Most of the writings have been based upon observations on a small number of clinical cases, but they do provide working hypotheses in regard to the relationship between thinking and conscience development.

3) In the same light that cognitive processes can be ordered into various dimen-

sions (primary versus secondary processes), the conscience can also be categorized into different typologies. Based on the formulation by Murray (1938), Fenichel (1945), Adorno (1950), and Fromm (1947), the conscience can be defined in three distinct types. Mainly these distinctions are between overly severe or unasimilated conscience, and strong, integrated conscience. Overly severe or unasimilated conscience is conceptualized as two theoretically distinct types and designated "Non-Integrated Conscience" and "Moralistic-Repressive Conscience." Strong and well-integrated conscience was designated "Integrated Conscience." The types can be defined in the following forms:

(a) *Non-Integrated Conscience*: Characterized by the presence of severe moral principles and strict prohibitions, but accompanied by rebellion against such standards and by such signs of overt conflict as guilt, self-reproach, and ambivalence.

(b) *Moralistic-Repressive Conscience*: Characterized by attitudes of rigid moral discipline toward oneself and others and the presence of excessive control over impulses and self-expression. In general, this conscience system is highly punitive, but moral standards are accepted without signs of overt conflict.

(c) *Integrated Conscience*: Characterized by the presence of strong ethical principles and disciplined acceptance of certain social standards. But such principles and standards are accepted because the individual deems to do so rather than because threat of punishment compels him to do so.

Method

In order to investigate the relationship between levels of thinking and types of conscience the Rorschach and a conscience scale containing three sub-tests were administered to a sample of college students ($N=40$). The Rorschach affords one the opportunity to assess primary and secondary process material.

1) Content variables—which has to do with the evidence of drive domination in the content of the test responses.

Subjects were scored for content variables such as:

- (a) libidinal drive representations (oral, anal and sexual)
 - level 1—crude, direct and primitive
 - level 2—controlled, indirect
- (b) drives with aggressive aims
 - level 1—crude, direct and primitive
 - level 2—controlled, indirect

2) Formal variables with deviations in response structure:

- (a) condensation
- (b) arbitrary combinations
- (c) visual representations of the abstract
- (d) contradiction
- (e) deviant verbalization
- (f) autistic elaboration
- (g) self-reference

3) Control and defense variables dealing with the subject's reaction to the emergence of material in either the content or formal categories. The following dimensions summarize the variables concerned with control and defense:

- (a) defense demand of response
- (b) effectiveness of defense

The three scoring categories above represent the broad areas of concern and are not presented in the depth that would be necessary to operationally define each section. Such a presentation can be found in Holt (1956).

The data from the Rorschach were related to the same Ss responses on the conscience scales which are divided into three subtests: (a) integrated, (b) non-integrated conscience, and (c) moral repressive conscience. The conscience scale was derived from theoretical formulations of Murray (1938), Fenichel (1945), Fromm (1947), and Adorno (1950). A complete description of the scale, its validation and reliability, are to be found in Grunes (1956). The items used in the conscience scale consisted of 253 statements, each of which required a response of "true", "somewhat true", "somewhat false", or "false". One hundred items were in the Non-Integrated Scale, 69 in the Moralistic-Repressive Scale, and 84 in the Integrated Scale. For scoring purposes, the four alternatives were given weights of one, two,

three, and four. A weight of four was always assigned to that alternative which reflected the highest degree of the characteristic being measured in each scale. Approximately one-third of the items in each scale is worded so that the highest weighting was given to the "false" alternative in order to avoid the development of sets to respond in a given direction (Grunes, 1956).

Scoring Procedures for the Rorschach

The Rorschach was administered in accordance with the procedures outlined in the Rapaport publication (1946). Since the Holt scoring procedures make certain unique demands for data of a kind that are not always present in a protocol, a few innovations were used. First, a complete verbatim protocol of everything the S said was taken. Second, inquiry was made on every response. Third, an attempt was made to assess the affect level of the response. The Rorschachs were administered by two clinical psychologists.

For every scorable Rorschach response the following scores were recorded: 1) the form level, 2) *pripro* content, 3) *pripro* formal elements, 4) defense and control aspects of the response, 5) creativity of the response, 6) defense demand of the response, and 7) defense effectiveness of the response. It should be noted that more than one Content, Formal, Defense, and Control score can be given to a single response. Since this was the case, the principal summary scores included: 1) Total percent level 1, 2) Total percent level 2 for both Content and Formal elements (expressed as a percentage of total R). In the preceding method *no response was counted more than once*, even though a number of *Pripro* scores were given in the response. This procedure has the obvious consequence of underweighting the total amount of *pripro* material in some records. Consequently, some effort was made to explore the *density scores* in which each score is counted, the sum being divided by R or *Pripro R*.

Two psychologists trained in the Rorschach method independently scored the protocols using the Holt manual as a guide. Inter-rater agreement for Content was .90, .85 for Formal aspects, .95 for De-

fense demand, and .90 for Defense effectiveness. Agreement on the specific categories for the Content level was .75 and .60 for the Formal elements. Disagreements were resolved at a joint conference. The conscience questionnaire was scored by a research assistant. Since this is a paper and pencil test, scoring reliability was not a factor. The Rorschach judges were not aware of the S's score on the conscience scale. In previous work with the conscience scale, it was found that the integrated and non-integrated scales of the conscience test were negatively correlated to some degree (Grunes, 1956). In the present study the Rho correlations between the three scales were:

Moral repressive with integrated	.14	(n.s.)
Integrated with non-integrated	-.72	.01
Moral repressive with non-integrated	.23	(n.s.)

The intercorrelations among the three scales are consistent with Grunes' contention that three distinct types of conscience can be identified. The two positive correlations are low enough to justify the inference of distinct types of conscience as defined. The negative correlation between non-integrated and integrated conscience was to be expected since they were originally conceptualized as polar in character.

Since it was found that the moral repressive scores were spread across the integrated non-integrated continuum, it was decided to hold this variable constant and to divide the Ss into two groups: those with high scores on the non-integrated scale and those with high scores on the integrated scale. When this was done, it was found that the rank order difference on the moral-repressive scale was not significant between the two groups. In essence two groups were created that differed on two scales of the conscience test. The differences for this group on I. Q., age, and ethnic background were not significant.

Hypotheses and Rationale

(1) The formulation of an integrated system of control would seem to necessitate delay and a rational basis for moral behavior. For such a conscience to exist, reliance upon secondary process thinking

should be in evidence. As an individual develops "moral realism" and tests reality by experimental thinking, a balance between impulse control and gratification of drives should be achieved. For this reason a strong relationship between secondary process thinking and an integrated conscience should pertain.

Although there are no categories specifically designed to measure the effects of the secondary processes as such (we are concentrating on the lower portion of the primary-secondary continuum), the absence or relative lack of primary processes implies secondary controls.

Hypothesis: Integrated conscience types should be low in Primary process emphasis.

(2) According to the Freudian model the conflicted superego (Fenichel, 1945) is the result of the incomplete neutralization of primary processes. Empirically there should be a moderate relationship between primary process thinking and non-integrated superego formation.

Hypothesis: Ss indicating a non-integrated conscience should have the highest scores of the measures of primary process thinking (categories #1 and #2 in the Method section).

Statistical Treatment

Since the groups under question are independent groups and the level of measurement was at least an ordinal scale (percentages of *R*, the decision was made to test the differences in central tendency by using the median test. The reason behind using the median test was that the median represented the best measure of central tendency since a number of extreme values, i.e., 0% or 100% were noted in the sample. The procedures for this test are outlined in Siegel (1956). Since the number of cases was sufficiently large, the chi square test of significance was appropriate for the median test. The null hypothesis was that the two groups are from populations with the same median. In the tables depicting the results the scores above and below the combined group me-

dian are presented for each group along with the chi square and the probability values.

Results

From the data in Table 1 it can be seen that there are little differences between the two groups on the following variables: Creativity, Form Level and Defense Effectiveness. On the whole, the responses were fairly prosaic (creativity levels of 3.5 and 3.3) with the Form Level modal responses falling in the *Fo* or popular category. Since the group was composed of college students whose I.Q. level was similar, the lack of difference of the two groups was expected since intellectual level would determine both Creativity and Form Level. One difference was noted and that was on the Defense Demand quality of the responses (it was interesting to note that the defense effectiveness for both groups were highly similar in spite of the difference on Defense Demand). The non-integrated group tended to give responses that had higher Defense Demand characteristics.

In Table 2 the percentage of Primary Process responses for the Content and the Formal aspects are given for both groups. For each response only one Primary Process response was recorded (even though a response may have contained more than one recordable PPR) for either the content or formal levels or both. This breakdown gives a clear picture on the relative level of Primary Process material to the total *R* in any one protocol. Both groups gave relatively small amounts of level one PPR in the *Content* and *Formal* categories. The difference between the non-integrated and integrated groups was significant, however, for *Content* and *Formal* aspects on level 1 responses. There was also a significant difference between the two groups on the production of level 2 *Formal* aspects PPR. There was no difference between the two groups on level 2 PPR *Content*. The fact that the non-integrated group had a higher percentage of overall Primary Process responses would explain the difference found on the Defense Demand category in Table 1.

Density Scores

Another way of looking at Primary Process responses is to sum up the total

Table 1
Comparisons of the Global Rorschach Variables
Between Integrated and Non-Integrated Conscience Groups

Variable	Integrated n = 20	Non-Integrated n = 20	Combined Mdn	\bar{X}^2	P
Creativity Mdn	3.50	3.30	3.45	N.S.	
Above	13	7			
Below	7	13			
Form Level Mdn	+1.3	+1.1	1.2	N.S.	
Above	11	9			
Below	9	11			
Defense Demand Mdn	1.55	2.50	1.85		.01
Above	5	15			
Below	15	5			
Defense Effectiveness Mdn	1.30	1.25	1.28		
Above	11	9			
Below	9	11			

Note.—Creativity was judged on a four-point scale as follows: 1. distinctly original, 2. moderately original, 3. unusual but not original, 4. common.

Form Level was rated on a seven-point scale as follows: +2 (*F+*), +1 (*Fo*), 0 (*Fw+*), -1 (*Fw-*), -2 (*Fv*), -3 (*Fa*), -4 (*F-*).

Defense Demand was rated on a six-point scale as follows: 1. no apparent need for defense, 2. slight need, 3. moderate need, 4. considerable need, 5. great need, 6. greatest need for defense.

Defense Effectiveness was rated on a six-point scale as follows: 2. highly successful, 1. successful, 0. moderately successful, -1. relatively unsuccessful, -2. unsuccessful, -3. disorganized response.

amount of PPR responses even though they may exceed the number of scorable Rorschach responses. This method accounts for the density scores of a protocol. The relationships are usually expressed as percentages of either total *R* or as a proportion of total number of Primary Process responses. When the density scores are given as percentage of *R*, an indication of an overall magnitude of PPR material is achieved. For example: the integrated group had a total percentage of level 1 responses in the order of 7 percent when one PPR response was recorded for each scorable Rorschach response and 9 percent when the density scores were used. On the other hand, the non-integrated group had 19 percent and 23 percent respectively. These relationships are depicted in Table 3. The rates of increase for both groups were fairly equal. For level 2 PPR the integrated group increased from 52% to 64%, and

the non-integrated group increased from 61% to 73%. From Table 3 it can be seen that the two groups differ significantly in the proportions of level 1 to level 2 PPR responses. It is also evident that the non-integrated group has a higher combined score of all types of *Pripro* responses, 96% vs. 73% for integrated group.

Content Scores

An attempt was made to analyze the types of content that were evident in the responses of the *Ss*. A preliminary examination disclosed that the predominant responses were aggressive type content as opposed to the libidinal types, i.e., anal, oral, sexual or exhibitionistic-voyeuristic. Therefore, (for the sake of convenience) all the libidinal types were pooled together. Table 4 shows the proportions, for each group, of aggressive to libidinal responses for both level 1 and level 2. It is interesting to note that, even though both

Table 2

Comparisons between Integrated and Non-Integrated Conscience Groups
on Primary Process Content and Formal Variables Expressed as Percentages of *R*

Variable	Integrated n = 20	Non-Integrated n = 20	Combined Mdn	\bar{X}^2	<i>P</i>
Content					
Level 1 Mdn	2%	18%	8%		
Above Mdn	6	14			
Below Mdn	14	6		4.9	.05
Level 2 Mdn	46%	42%	44%		
Above Mdn	11	9			
Below Mdn	9	11		N.S.	
Formal					
Level 1 Mdn	5%	11%	10%		
Above Mdn	5	15			
Below Mdn	15	5			.01
Level 2 Mdn	6%	19%	17%		
Above Mdn	6	14			
Below Mdn	14	6		4.9	.05

Note.—For each Rorschach response only one primary process response was counted for either or both the content or formal variables.

Table 3

Comparisons of the Density Scores of Primary Process
Variables both Integrated and Non-Integrated Conscience Groups

Variable	Integrated n = 20	Non-Integrated n = 20	Combined Mdn	\bar{X}^2	<i>P</i>
Density Score % <i>R</i>					
Level 1 Mdn	9%	23%	18%		
Above Mdn	5	15		8.1	.01
Below Mdn	15	5			
Level 2 Mdn	64%	73%	64%		
Above Men	9	11		N.S.	
Below Mdn	11	9			
Density Score					
Proportion of Level 1 to Level 2 Mdn	15%:85%	38%:62%	22%:78%		
Above Mdn	6	14		4.9	.05
Below Mdn	14	6			

Note—Total number of primary process responses were counted for every scorable Rorschach response. A given response could have more than one pripro response for either content or formal aspects.

groups are high on aggressive type responses, the non-integrated group was significantly higher on the percentage of aggressive responses (80 percent to 70 percent). The aggressive content responses were fractionated into level 1 and level 2 cate-

gories using total aggressive responses as the denominator. Their proportions are presented in Table 5. It is clear that the non-integrated group had significantly higher percentage of level 1 aggressive content as compared to the integrated group.

Table 4
Comparisons of the Ratio of Aggressive to Libidinal Responses
between Integrated and Non-Integrated Conscience Groups

Variable	Integrated n = 20	Non-Integrated n = 20	Combined Mdn	\bar{X}^2	P
Proportion of Aggressive to Libidinal Content (Level 1 and Level 2)	70% : 30% Aggres. Libid.	80% : 20% Aggres. Libid.	75% : 25%		
Above Mdn	8	12		N.S.	
Below	12	8			

At this point an examination of the type of aggressive content would have been in order. Each aggressive response was coded as to whether it was potential or active, subject or object oriented, or whether it was the results of action. It was not surprising to note that the interrater agree-

ment on the separate categories of aggressive responses was not as high as agreement on the overall score of aggressive content versus other types. Inter-rater agreement on the overall category was .75 while the sub-categories varied in their level of agreement from .30 to .70. For

Table 5
Comparisons of the Ratio of Level 1 to Level 2 Aggressive
Responses for the Integrated and Non-Integrated Conscience Groups

Variable	Integrated n = 20	Non-Integrated n = 20	Combined Mdn	\bar{X}^2	P
Proportion of Level 1 to Level 2 Aggressive Content	5% : 95%	17% : 83%	15% : 85%		
Above Mdn	6	14			
Below Mdn	14	6		4.9	.05
Proportion of Level 1 to Level 2 Libidinal Content	7% : 93%	15% : 85%	10% : 90%		
Above Mdn	8	12			
Below Mdn	12	8		N.S.	

this reason it was decided that a molecular analysis of the aggressive responses were untenable. Scorer reliability between content level was .75 as opposed to the .50 within any content level, i.e., libidinal or aggressive. It was not difficult to distinguish between content areas and to agree on this classification but to try to categorize the content response into its suggested components (as the Holt Manual outlines them) is a more difficult task.

Discussion

It would seem that there are three salient implications that have arisen from the present findings. One is the relationship of the findings to the body of ego-psychological theory. Second is the relationship of the findings to cross-cultural findings, and third is the relationship of the scoring reliabilities to Holt's research on the development of the instrument for Primary Process analysis.

In general, the results seem to uphold the overall hypothesis that there is a relationship between cognitive ego development and the development of moral attitudes. It seems apparent that a primitive ego is associated with a punitive and conflictive conscience. The significance of these results can be interpreted in the light of certain theoretical developments in ego psychology by Piaget (1932), Hartmann (1950), and Anna Freud (1965) in which continuous growth of the integrated organism is stressed rather than compartmentalized unfolding of functions as espoused by early Freudians. In terms of the early body of theory the superego and the ego are juxtaposed as psychological processes that obey different system principles. The implication from the current data is that ego and conscience formation are concomitants of the same process or that one influences the other in an interactive fashion. The most tenable stand, based on Piaget's observations, is that ego development precedes the formation of conscience values and that ego development plays an integral role in the subsequent formation of the conscience. The process is not a fixed sequence but probably a feedback system where cognitive and moral processes mutually influence each other. It was the early Freudians' failure to recognize the continuity in de-

velopment which led them to emphasize the disjointive relationship between the ego and the superego. Piaget, on the other hand, was cognizant of the organizing effect of cognitive processes upon the development of a reasonable moral system of attitudes. He clearly delineated the role of questioning and assimilation of moral authority within the frame of reference of logical thinking. The same implications are found in the properties of primary and secondary processes in the Freudian schema, but they are not conceptually related to superego development. Since the present study is a cross-sectional analysis of adults, no more than mere speculation can be offered as to the causal linkage between the two events. What is quite evident is that there exists an interactional linkage between the development of cognitive processes and conscience development. In Talcott Parsons' essay on "Superego and the Theory of Social Systems," he attempted to point out the arbitrary dissociation of the superego from the ego by the Freudians. It was also part of Parsons' contentions that the content of moral standards are the result of the interaction with a common culture of expressive-affective symbolism rather than with the passing of the Oedipal Complex. According to Parsons (1964), "Moral standards, indeed, can't in this respect be dissociated from the content of the orientation patterns which they regulate...this content is cultural and learned." These two issues of the interdependence between ego and superego and the role of cultural factors in the formation of moral standards are germane to the findings in the present study.

As a side issue to the cultural influences upon cognitive and moral development is the finding that among the Rorschach responses there was a preponderance of aggressive content versus libidinal content. The response style of the group may be a culturally determined pattern that represents a general area of intrapsychic and group conflict. It could well be in an ascendent culture such as ours, indirect aggressiveness and dominance are reinforced while overt hostility is negatively sanctioned. For this reason the latent conflict is expressed in the projec-

tive style of the group.

It has been noted by some social scientists that each society has its own modal conflicts that are recurrent in the fantasy productions and projective mechanisms of the people (Whiting, 1959). It has been postulated by Whiting that the dominant conflict in the American culture revolves around the identification with the psychosocial roles of parent and child. The same conceptualization, in a modified form, has been presented by Erikson (1950). The large amount of aggressive content would be related to the conflict between these antithetical roles. The fact that this was a college population who are most prone to identity conflict would reinforce this interpretation. This would place sexual conflict in a secondary role (of course, the sample is too small and unrepresentative to make such sweeping generalizations, but it is a point of departure for future research).

In addition to these findings that have theoretical value, the scoring reliabilities of the present study agreed rather closely with the reliability coefficients in the Holt study (Holt, 1964). High agreement was found between scores on total Primary Process categories, i.e., level 1 versus level 2 and differentiation between content categories on both levels (aggressive versus libidinal). But less reliability was noted in the scoring of the formal pprp responses. In regard to content scores, there was relatively little confusion between categories. The difficulty was when one wanted to distinguish subcategories within the general content area, i.e., subject versus object, active versus potential. All these findings point to the overall reliability of the instrument but seem to raise the question of the feasibility of using the fine grain distinctions within categories. Whether the distinctions within categories are questionable or whether the scoring rules are too nebulous cannot be determined, but it would appear that the present system with so many categories is unwieldy and unnecessary.

REFERENCES

- Adorno, T. W. *The authoritarian personality*. New York: Harper & Brothers, 1950.
- Erikson, E. *Childhood and society*. New York: W. W. Norton & Company, Inc., 1950.
- Fenichel, O. *The psychoanalytic theory of neurosis*. New York: W. W. Norton and Company, Inc., 1945.
- Freud, A. *The ego and the mechanisms of disease*. New York: International Universities Press, Inc., 1946.
- Freud, A. *Normality and pathology in childhood*. New York: International Universities Press, Inc., 1965.
- Fromm, E. *Man for himself*. New York: Rinehart, 1947.
- Grunes, M. *Some aspects of conscience and their relationship to intelligence*. Unpublished doctoral dissertation, Col. Univ., 1956.
- Hartmann, H. *Comments of the psychoanalytic theory of the ego*. Psychoanal. study child. New York: International Universities Press, Inc., 1950.
- Holt, R. R. *Gauging primary and secondary processes in Rorschach responses*. *Journal of Projective Techniques*, 1956, 20, 14-25.
- Holt, R. R. *Rorschach manual for pprp scoring*. 9th Edition, 1964.
- Klein, G. S. *Need and regulation, in Nebraska symposium on motivation*. M. R. Jones, Ed. Lincoln: University Nebraska Press, pp. 224-274, 1954.
- Murray, H. A. *Explorations in personality*. New York: Oxford Univ. Press, 1938.
- Parsons, T. L. *Social structure and personality*. London: The Free Press, 1964.
- Piaget, J. *The moral judgment of the child*. London: Routledge and Kegan, Ltd. 1932.
- Rapaport, D., Gill, M., & Schafer, R. *Diagnostic psychological testing*. Chicago: Year Book Publishers, Inc., 1946.
- Rapaport, D. *The structure of psychoanalytic theory*. New York: International Universities Press, 1960.
- Sandler, D. *On the concept of the superego*. *Psychoanalytic study of the child*. Vol. 15, New York: International Universities Press, 1960.
- Schafer, R. *The loving and beloved superego in Freud's structural theory*. *Psychoanalytic study of the child*, Vol. 15, New York: International Universities Press, 1960.
- Siegel, S. *Nonparametric statistics*. New York: McGraw-Hill Book Company, Inc., 1956.
- Symonds, P. M. *The dynamics of human adjustment*. New York: Appleton-Century, 1946.
- Whiting, J. W. M. *Sorcery, sin and the superego: A cross-cultural study of some mechanisms of social control*. In *Nebraska symposium on motivation*. Lincoln: University of Nebraska Press, 174-195, 1959.
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Screening Juvenile Delinquents for Psychopathology by Use of the Z-Test

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Summary: The present study attempted to establish the validity of a projective technique for assessing the presence of psychopathology in juvenile delinquents. Zulliger's Z-Test, a three card inkblot technique, was scored in four categories assumed to measure psychopathology. Staff nominations of disruptive behavior and number of MMPI clinical scales above a T Score of 70 were the two validating criteria. Psychopathology on the Z-Test was found to be significantly related to the two criteria. Tentatively, it was concluded that the Z-Test, when scored in this manner, may be used as a gross but rapid indicator of emotional disturbance for this population.

The Z-Test, a Swiss projective technique, was developed by Hans Zulliger in 1942 for use in the group screening of officer candidates for the Swiss Army (Zulliger, 1948). Comprised of three inkblots, one achromatic and two chromatic, the Z-Test is similar to the Rorschach in size, symmetry and general style. The three cards may be used in individual administration (Zulliger, 1962), or in group administration with the aid of an opaque projector; in addition, 35mm slides for each plate have been developed and may be used in a standard projector. Administration requires approximately 10 minutes.

The first article on the Z-Test to appear in the United States by Eble, Fernald and Graziano (1963) shows that data from this projective technique are comparable to those from the Rorschach in several scoring categories. From the same authors' survey of the literature, it may be concluded that the Z-Test has been used—mostly abroad—for diagnostic, screening, and research purposes.

The writer has been using the Z-Test in an effort to develop, for institutionalized juvenile delinquents, a rapid screening instrument which does not require reading ability. The purpose of the present study is to examine the validity of one set of Z-Test scores in their relationship to two criteria of emotional disturbance. Would certain responses to the Z-Test, assumed to reflect psychopathology, be associated with nominations of disruptive boys made by institution staff members? Furthermore would such Z-

Test responses be positively related to psychopathology as measured by a standardized paper and pencil test of personality? If so, then the Z-Test could be used to alert appropriate staff to potential behavior problems either before or soon after admission to the institution. The Z-Test scores in question—modified for the present study—were derived from the Holtzman Inkblot Technique (Holtzman, Thorpe, Swartz, and Herron, 1961). These authors state that Factor III, comprised of movement, pathognomic verbalization, anxiety, and hostility, is "... indicative of disordered thought processes coupled with an active, though disturbed, fantasy life [p. 171]." The data of the Z-Test were scored in these four categories and related to two validating criteria: staff nominations of disruptive behavior; a measure of psychopathology derived from a personality inventory.

METHOD

Subjects

The sample consisted of 125 male delinquents, all inmates of a residential treatment and training school. Of this number there were: 97 whites, 27 Negroes, and 1 Oriental. The mean age was 14 years, 6 months \pm 11 months, and the mean I. Q. was 99 \pm 12. Estimated from Warner's (1960) *Revised Scale of Rating Occupation*, the social class background of this population was lower middle-class. The mean grade completed according to the *Stanford Achievement Test* (Kelley, Madden, Gardner, & Rudman, 1964) was 6.1 \pm 1.9.

*Measuring Devices and Procedure*¹

The Z-Test was individually administered to all Ss and scored for movement, pathognomic verbalization, anxiety, and hostility according to an approximation of the technique developed by Holtzman, et al. (1961). If a response in any category occurred one or more times it received a score of "1" and if it did not occur that category was scored "0". No restriction was placed on the number of responses permitted to each of the three cards, but protocols with less than a total of three responses were eliminated from analysis.

The Ss resided in 10 cottages each maintained by four child care workers. Disruptive behavior was measured by obtaining independent nominations for each S from the corresponding set of four cottage supervisors according to the following list of seven behaviors:

1. Anger: acts emotionally when he is interfered with, injured, or threatened—his face and body show his feelings.
2. Erratic performance: sometimes he does a good job and sometimes a poor job but you don't know when either is going to happen.
3. Hyperactivity: cannot remain quiet, is seldom calm or tranquil, constantly moving about, often engaged in random, unorganized activity.
4. Impulsivity: acts immediately, without thinking.
5. Irritability: ordinary events are reacted to emotionally with rage, avoidance, or fright.
6. Poor concentration: inability to give exclusive and persistent attention to something, or to focus on one activity.
7. Sleeplessness: problems related to falling asleep at night and remaining asleep, also sleepwalking.

Each of the 10 sets of four child care workers was instructed to enter the number of behaviors alongside the name of the boy in question on an alphabetized cottage roster. Thus if a boy showed anger, hyperactivity, and irritability to an extent which interfered with cottage functioning, the nominator would enter the number "3" next to the boy's name. Each

S received a disruptive behavior score and was classified above or below the median of the distribution for these scores according to his placement in one of four categories of psychopathology on the Z-Test. Examined by a chi-square analysis in a 2 x 4 contingency table was the hypothesis that Z-Test scores were related to nominations for disruptive behavior.

The other validating criterion was obtained from Form-R of the Minnesota Multiphasic Personality Inventory (MM-PI). Administered on tape to 96 of the 125 Ss within two weeks of their admission to the institution, the 399 items of this form of the MMPI were played to groups no greater than four in size. Instructed to read each item as it was being played on tape, the Ss—continuously monitored—responded on a National Computer Systems (NCS) answer sheet. These sheets were scored by NCS and a profile plotted for four validity and 10 clinical scales. Elevation of the clinical scales was used as a measure of psychopathology (Dahlstrom and Welsh, 1960). A chi-square analysis of the number of clinical scales greater or less than a *T* score of 70 for Ss in each of the four categories of psychopathology on the Z-Test was performed. The hypothesis was tested that Z-Test scores were related to number of clinical scales elevated on the MMPI.

Results

Disruptive behavior nominations ranged from zero to 27 with a median for the distribution of 11.7. Z-Test scores on Holtzman's (1961) four components of psychopathology ranged from zero to four. Because there were only seven scores of four, this category was combined with scores of three. Table 1 presents the chi-square analysis of these data. The proportions of Ss with scores from 0 to 3 and 4 on the Z-Test measure of psychopathology placing above the median in disruptive behavior are: .29, .71, .37, and .59, respectively. The chi-square of 14.81 for 3 *df* is significant beyond the .005 level of confidence suggesting that the association between Z-Test scores and disruptive behavior in this sample represents a genuine relation in the population.

¹ All data in this study were obtained from the Berkshire Farm Institute Data Reservoir on Juvenile Delinquents.

Table 1

Chi-Square Analysis of Scores Above or Below The Median on
Disruptive Behavior and Psychopathology on The Z-Test

Z-Test Psychopathology				
Disruptive Behavior	0	1	2	3 & 4
Above median	8	29	10	17
Below median	20	12	17	12

$$X^2 = 14.81$$

$$df = 3$$

$$p < .005$$

Table 2 presents for Ss in the four Z-Test scoring categories the number of MMPI clinical scales above and below a T Score of 70. For example, for the 18 Ss who received a zero score for movement, pathognomic verbalization, anxiety, and hostility on the Z-Test, 37 of a possible 180 MMPI clinical scales were elevated above a T Score of 70. On the other hand, for the 20 Ss who responded positively to three or four of the Z-Test categories indicative of psychopathology, 66 of a possible 200 MMPI clinical scales were elevated

above a T Score of 70. For each Z-Test category, the proportions of MMPI clinical scales elevated are, respectively: .21, .31, .28, .33. The chi-square of 8.26 for 3 *df* is significant beyond the .05 level of confidence indicating that psychopathology as manifested in responses to the Z-Test is related in this sample, and probably in the population, to psychopathology as measured by elevated profiles on the MMPI. In neither of the chi-square analyses were any of the expected cell frequencies less than 5.

Table 2

Chi-Square Analysis of Number of MMPI Clinical Scales Above 70 T Score
or 70 T Score and Below and Psychopathology on The Z-Test

Z-Test Psychopathology				
Disruptive Behavior	0	1	2	3 & 4
Above 70 T Score	37	110	62	66
70 T Score and below	143	250	158	134

$$X^2 = 8.26$$

$$df = 3$$

$$p < .05$$

Discussion

Statistical support of the proposed two hypotheses lends validity to the use of the Z-Test as a gross but rapid screening instrument for psychopathology in juvenile delinquents. Such emotional disturbance seems to be reflected in manifest motor behavior as observed by institutional staff and in elevation of scores on a personality inventory. Examination of the list of seven disruptive behaviors indicates that movement in the sense of exaggerated or

inappropriate motor behavior is a component of each. Thus, perceived movement of inkblot stimuli seems related to actual turmoil of the perceiver. This finding conflicts with Rorschach's (1942) supposition in which movement responses or experience of motion on the Rorschach Test are opposed to, or preclude, overt physical activity on part of the S. Rorschach assumed that movement responses were an expression in fantasy of re-

pressed overt motor behavior. Opposing Rorschach on this issue, Piotrowski (1960) holds that movement responses are directly related to overt motor behavior: "... the M disclose action tendencies which are not repressed but are acted out whenever there is an opportunity ... [p. 137]." The present results are in accord with Piotrowski's theory.

Further indicated by the current findings is that a binary scoring system can be meaningfully applied to inkblot categories. Thus the scoring problems which arise because of the variation in number of responses among Ss (Zubin, Eron, & Schumer, 1965) are largely mitigated. Also supported by the present study is the general applicability of the norms and scoring categories developed by Holtzman et al. (1961) to other inkblots.

Cross validation of the present results are necessary to strengthen the use of the Z-Test as a diagnostic and screening instrument. An additional limitation of the findings arises from the nature of the research design: Z-Test scores—if considered as treatments—were not randomly assigned to Ss. Consequently, organismic variables were not controlled by the process of randomization and, theoretically, may have affected the relationship between Z-Test scores and the validating criteria.

REFERENCES

- Dahlstrom, W. G., & Welsh, G. S. *An MMPI handbook*. Minneapolis: University of Minnesota Press, 1960.
- Eble, S. J., Fernald Jr., D., & Graziano, A. M. The comparability of quantitative Rorschach and Z-Test data. *Journal of Projective Techniques & Personality Assessment*, 1963, 27, 166-170.
- Holtzman, W. H., Thorpe, J. S., Swartz, J. D., & Herron, W. E. *Inkblot perception and personality*. Austin: University of Texas Press, 1961.
- Kelley, T. L., Madden, R., Gardner, E. G., & Rudman, H. C. *Stanford Achievement Test*. New York: Harcourt-Brace, 1964.
- Piotrowski, Z. A. The movement score. In Maria A. Rickers-Ovsiankina (Ed.), *Rorschach Psychology*. New York: Wiley, 1960. Pp. 130-153.
- Rorschach, H. *Psychodiagnostics*. New York: Grune & Stratton, 1942.
- Warner, W. L., Meeker, M., & Eells, K. *Social class in America*. New York: Harper, 1960.
- Zubin, J., Eron, L. D., & Schumer, F. *An experimental approach to projective techniques*. New York: Wiley, 1965.
- Zulliger, H. *Der Z-Test; ein formdeut-Verfahren zur psychologischen Untersuchung von Gruppen*. Bern, Switzerland: Hans Huber, 1948.
- Zulliger, H. *Der Zulliger-Taflen Test*. Bern, Switzerland: Hans Huber, 1962.
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Differential Responses of Addicts and Non-Addicts on the MMPI¹

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Summary: An item analysis of MMPI responses of drug addicts and a matched control group was performed. Cross-validation procedures were used. The results identified nineteen (19) items which significantly differentiated the two groups. The authors feel that these items will be both useful in the identification of the drug addiction syndrome and develop insight into the understanding of conflict areas of the addict. It is suggested that these items can form a part of the diagnostic clinical interview.

Although the drug addiction problem has received increasing attention within the past few years, particularly in urban centers, little has been developed to aid in the early identification of the addict. Most investigations on the identification of basic personality patterns have been theoretical and based on limited case studies. Often a close resemblance has been found between patterns of behavior in the alcoholic and the addict (Belleville, 1956; Stanton, 1956).

The general assumption is that the addict suffers from a personality weakness (Wakefield, 1963). Gerard and Kornetsky (1954) found that more than half of their addict Ss suffered from either character disorders or inadequate personalities. Hill, Haertsen and Glaser (1960) found that the *Pd* scale of the MMPI was the most frequently elevated score presented by their addict Ss. Gilbert and Lombardi (1967) confirmed this general character disorder syndrome and recommended early identification of the addict as a means of decreasing addiction.

The present study assumed that there were personality traits common to drug addicts and attempted to empirically derive a scale to aid in the identification of such a syndrome. The Minnesota Multiphasic Personality Inventory (MMPI) was selected as the tool of investigation since it is a commonly used clinical instrument and contains a large item pool which

seemed likely to yield demonstrable differences between addicts and non-addicts. Further, the MMPI has met with varying degrees of success in identifying other clinical syndromes.

Procedure

MMPI records were originally obtained on 75 experimental Ss (addicts) and 75 control Ss (non-addicts). Profiles of the experimental Ss were randomly selected from the files of addicts either presently incarcerated in the Essex County Penitentiary in New Jersey for drug addiction offenses or presently undergoing outpatient treatment for drug addiction at the Mount Carmel Narcotic Clinic in Newark, New Jersey. Profiles of the control Ss were obtained either from the files of non-addicts incarcerated in the same penitentiary or from volunteers obtained through the Neighborhood Youth Corps in New Jersey.² Those profiles which contained a raw score in excess of 50 on the "?" (cannot say) scale or 5 on the *L* (Lie) scale were considered invalid and eliminated from the study (Meehl, 1946). As a result, the final sample upon which this study is based included 60 experimental and 60 control Ss.

An effort was made to match each experimental S with a control S in terms of the variables listed in Table 1. Each pair (E-C) was assigned either to the original group or the cross-validation group on a random basis.

All item responses were transferred to IBM cards and an item analysis was conducted by means of the IBM 1620 computer system. This analysis was done separately for the original and cross-validation groups. A *t* test between proportions was computed for each item with significance

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set at the .05 level of confidence. Only those items which reached this level of significance in both the original and cross-validation studies were retained in the final scale.

Table 1
Sampling Characteristics

Factor	Original Group		Cross-Validation Group	
	Addicts	Controls	Addicts	Controls
Number	30	30	30	30
Mean Age (yrs.)	23.7	22.6	22.6	21.9
Age Range (yrs.)	18-34	18-33	17-31	16-33
Negro	50.0%	46.7%	43.3%	50.0%
White	50.0%	53.3%	56.7%	50.0%
Catholic	43.3%	43.3%	43.3%	23.3%
Protestant	56.7%	56.7%	56.7%	76.7%
Average Socio-economic Level	40.0%	43.3%	26.7%	30.0%
Low Socio-economic Level	40.0%	33.3%	46.7%	46.7%
Unknown Socio-economic Level	20.0%	23.4%	26.6%	23.3%
High School Dropout	76.6%	70.0%	60.0%	60.0%
High School Graduate	3.3%	0.0%	10.0%	0.0%
Unknown Education Status	20.0%	30.0%	30.0%	40.0%
Incarcerated	53.3%	53.3%	43.3%	43.3%
Non-Incarcerated	46.7%	46.7%	56.7%	56.7%
Male	100.0%	100.0%	100.0%	100.0%
Female	0.0%	0.0%	0.0%	0.0%

Results

A total of 66 items reached the significance level in the original sample and 96 items in the cross-validation sample. Of

these items, only 19 met the criterion of significance in both the original and cross-validation samples. Table 2 presents a list of these final items with appropriate *t* values and scoring direction.

Table 2
Significant Addict Responses Denoting MMPI
Booklet Number and Direction of Scoring

MMPI Number	Item	Direction of Scoring	<i>t</i> Values	
			Original	Cross Valid.
41	I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."	T	3.28	3.10
46	My judgment is better than it ever was.	F	2.25	3.44
61	I have not lived the right kind of life.	T	2.47	4.80
95	I go to church almost every week.	F	3.32	2.07
107	I am happy most of the time.	F	3.86	3.23
168	There is something wrong with my mind.	T	2.16	2.36
224	My parents have often objected to the kind of people I went around with.	T	3.62	2.29
225	I gossip a little at times.	T	2.07	3.62
259	I have difficulty in starting to do things.	T	2.15	4.48
277	At times I have been so entertained by the cleverness of a crook that I have hoped he would get by with it.	T	2.07	3.03
289	I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.	F	3.32	3.94
294	I have never been in trouble with the law.	F	3.25	4.80
318	My daily life is full of things that keep me interested.	F	3.42	5.89
328	I find it hard to keep my mind on a task or job.	T	2.80	3.11
354	I am afraid of using a knife or anything very sharp or pointed.	F	2.67	2.67
411	It makes me feel like a failure when I hear of the success of someone I know well.	T	2.44	2.44
430	I am attracted by members of the opposite sex.	T	3.84	2.74
461	I find it hard to set aside a task I have undertaken, even for a short time.	F	2.44	2.44
466	Except by a doctor's orders I never take drugs or sleeping powders.	F	7.81	7.81

Discussion

Since the number of items in the final scale are relatively few, the reliability of the instrument needs to be carefully investigated and appropriate norms established.

However, the scale appears to have good content validity on the basis of the clinical and theoretical knowledge of drug addicts.

The similarities between the alcoholic and the drug addict are reflected in the item overlap with existing MMPI scales on

alcoholism. Eight of the 125 items contained in Hampton's (1951) Alcoholism (*Al*) scale were found significant in this study. Of the 59 items in Holmes' (1960) Alcoholism (*Am*) scale, seven items correspond with items identified in this study. There is also a six item overlap with the 57 item Heroin (*He*) scale (Cavior, Kurtzberg, & Lipton, 1967), but this study did not use cross-validation procedures.

The addict items tend to be principally derived from the psychopathic deviate (*Pd*) (seven items) and depression (*D*) (eight items) scales of the MMPI, corre-

sponding closely to the clinical picture of gross feelings of inadequacy coupled with a basic character disorder or inadequate personality (Gilbert & Lombardi, 1967).

It should be pointed out that these final 19 items consistently discriminated addicts and would seem to be directly related to some observable personality characteristics peculiar to drug addicts. For instance, addicts responded significantly in the "true" direction to "It makes me feel like a failure when I hear of the success of someone I know well." This evident feeling of inadequacy is not necessarily peculiar to addicts as clinical patients but is probably an integral part of the clinical picture of the addict personality.

Other examples are indicated by addicts' responses to such items as "I have difficulty in starting to do things" and "I have not lived the right kind of life." "True" responses to such items as these would probably indicate, in addition to an inadequate personality, a lethargic approach to life, perhaps even a perception of being out of the "mainstream" of the world in which one lives—a sort of emptiness and loneliness.

Gilbert and Lombardi (1967) studied the social desirability of Ss' responses to MMPI items, finding that addicts were less inclined to endorse socially desirable items than were non-addicts. The findings also seemed to indicate that the social desirability of the items heightened the differences between addicts and non-addicts on the MMPI, but when this factor was extracted from the results, the differences still remained. Thus, the differential responses obtained in this study, although possibly influenced by social desirability, are very likely not exclusively the result of this factor.

In light of the above, it would seem that this scale may find equal utility by

serving as guidelines for investigation in the clinical interview situation. Coupled with other diagnostic information, responses to these items may serve to increase the efficiency of identifying the addict-prone personality.

REFERENCES

- Belleville, R.E. MMPI score changes induced by lysergic acid diethylamide (LSD-25). *Journal of Clinical Psychology*, 1956, 12, 279-282.
- Cavior, N., Kurtzberg, R.L., & Lipton, D.S. The development and validation of a heroin addiction scale with the MMPI. *International Journal of Addictions*, 1967, 2, 129-137.
- Gerard, D. L. & Kornetsky, C. A social psychiatric study of adolescent opiate addicts. *Psychiatric Quarterly*, 1954, 28, 113-125.
- Gilbert J. & Lombardi, D.N. Personality characteristics of male narcotic addicts. *Journal of Consulting Psychology*, 1967, 31, 536-538.
- Hampton, P.J. A psychometric study of drinkers. *Journal of Consulting Psychology*, 1951, 15, 501-504.
- Hill, H.E., Haertzen, C.G., & Glaser, R. Personality characteristics of narcotic addicts as indicated by the MMPI. *Journal of General Psychology*, 1960, 62, 127-139.
- Holmes, W.O. The development of an empirical MMPI scale for alcoholism. In W.G. Dahlstrom, & G. S. Welsh (Eds.), *An MMPI Handbook*. Minneapolis: University of Minnesota Press, 1960.
- Meehl, P.E. Profile analysis of the MMPI in differential diagnosis. *Journal of Applied Psychology*, 1946, 30, 517-524.
- Stanton, J.M. Group personality profile related to aspects of antisocial behavior. *Journal of Criminal Law, Criminology, and Political Science*, 1956, 47, 340-349.
- Wakefield, D. (Ed.) *The Addict*. Greenwich, Connecticut: Fawcett, 1963.

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Frequency of Nude Figure Drawings¹

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Summary: Of 91 male undergraduates enrolled in a weight-lifting course who were requested to draw a male figure, 48% drew a complete nude with genitalia and an additional 16% drew a full nude figure with the exception of genitalia. Analysis of the possible bases of this rare result suggests the importance of considering and reporting in detail a variety of features of the research context, such as instructions, other assessment procedures, clinicians' and subjects' hypotheses, and grouping of subjects.

It is well known among projective testers that nude figure drawings are rare. In contrast with this generalization, the results obtained in the course of a series of studies on personality correlates of body form (somatotype) were so exceptional that they merit brief report and discussion.

A group of 98 male students (45% freshmen, 39% sophomores, 16% juniors) at Washington State University was administered a battery of psychological tests by the writers. In addition to taking the MMPI, Kuder Preference Record, and Allport-Vernon-Lindzey Study of Values, and rating themselves on an adjective list (Buss & Gerjuoy, 1957), they followed mimeographed instructions requesting them to draw a male figure. The most striking feature in the drawings was that 58 of 91 subjects (64%) had drawn a completely nude figure. Of the 58 nude drawings, 44 were drawn with a penis (48% of the total group). Drawings of 7 subjects were excluded because they could not be clearly identified as clothed or nude.

This result is very unusual when compared with other findings. Although interested in sexual symbols in drawings, Starr (1954) mentioned nothing about nude drawings for 90 male students enrolled in introductory courses in psychology, philosophy, and education at the same university about 4 years earlier when they were asked to "draw a person." Other studies on figure drawings that reported

the frequency of nudes and genitalia have included heterogeneous data from both sexes and drawings of male and female figures. Although diverse subject groups such as school children, adolescents, job applicants, nuns, student nurses, and psychiatric patients have been studied, the percentage of nude figure drawings has not exceeded 8, while the percentage of drawings with genitalia has not exceeded 3 (Dennis, 1965; Fisher, 1961; Gravitz, 1966²; Holzberg & Wexler, 1950; Koppitz, 1966).

Although the present findings merely constitute the demonstration of an unexpected and heretofore unreported phenomenon instead of isolating any cause-effect relationships, they do raise interesting and important questions about the possible elements of a research context that could produce results so deviant from the norm. For example, some of the elements of the present research context that might be relevant are enumerated below:

1. The written instruction requested the students to "draw a male figure, the whole figure." Since they were not asked to "draw a person," which is the usual request, there may have been some suggestion that a figure devoid of clothing or showing conspicuous male features was desired. However, Holzberg and Wexler's (1950) subjects drew few nudes when asked for a "figure of a whole person."

2. The Ss had signed up for weight-lifting as their elective in physical education and were also participating in a research project conducted by the Department of Physical Education which involved physiological measures and tests of arm strength after a standard arm exer-

¹ The analyses of data collected in this study were aided by Grant M-2569 (A) from the National Institutes of Health, U. S. Public Health Service.

² Gravitz (personal communication, January 1967) stated that in this study of drawings of 2,000 job applicants, nudes were "rare."

cise.³ These tests may have led to increased concern with physical characteristics of the body. It is possible, moreover, that narcissism is a common factor underlying both the election of weight-lifting as a course of training as well as the drawing of a nude figure. For example, Harlow (1951) reported greater narcissism in weight-lifters as compared with other athletically inclined men. It is also of interest that Apfeldorf (Apfeldorf & Smith, 1966), in referring to his earlier study (Apfeldorf, 1953, p. 286) of the drawings of physical education majors, stated that "a sizable number of them depicted nude or seminude well-muscled figures".

3. As part of the interest in correlates of body form with strength, the physical education investigators had already photographed most of the Ss according to the Sheldon (Sheldon, Dupertuis, & McDermott, 1954) procedure which calls for nude photos taken from the front, back, and side. Several of the Ss' drawings were directly influenced by this experience, for they drew two or three views of the body (although only the front view was counted).

4. Since the Ss took the test battery in groups of 10 or 15, it was possible for a S to be influenced by his neighbors' drawings even though they were separated by several seats.

There is generally deficient reporting of variables which may commonly determine Ss' responses to the request to draw a person, such as instructions, administrator characteristics and expectancies (Rosenthal, 1966), physical facilities and grouping, concurrent assessment procedures suggesting the purpose of the research or producing fatigue or resistance, and Ss' hypotheses and attitudes (Barber, 1967; Orne, 1962). Reporting of this information should become standard practice in research on assessment devices

whenever possible. Although there is clearly a need for experiments on the influence of these variables in the drawing procedure, only a few have been found in reviews of the literature by Masling (1960, 1966). Although few specific effects can be cited with confidence, it is clear that figure drawing behavior is a function of the conditions of testing as well as S variables. When these are permitted to vary simultaneously, inferences about personality dynamics from test performance are virtually meaningless.

REFERENCES

- Apfeldorf, M. The projection of the body self in task calling for creative activity. Unpublished doctoral dissertation, Univer. of North Carolina, 1953.
- Apfeldorf, M. & Smith, W. J. The representation of the body self in human figure drawings. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 283-289.
- Barber, T. X. Hypnotic phenomena: A critique of experimental methods. In J. E. Gordon (Ed.), *Handbook of clinical and experimental hypnosis*. New York: Macmillan, 1967. Pp. 444-480.
- Buss, A. H. & Gerjuoy, G. The scaling of terms used to describe personality. *Journal of Consulting Psychology*, 1957, 21, 361-369.
- Dennis, W. The religious content of human figure drawings made by nuns. *Journal of Psychology*, 1965, 61, 263-266.
- Fisher, G. M. Nudity in human figure drawings. *Journal of Clinical Psychology*, 1961, 17, 307-308.
- Gravitz, M. A. Normal adult differentiation patterns on the figure drawing test. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 471-473.
- Harlow, R. G. Masculine inadequacy and compensatory development of physique. *Journal of Personality*, 1951, 19, 312-323.
- Holzberg, J. D. & Wexler, M. The validity of human form drawings as a measure of personality deviation. *Journal of Projective Techniques*, 1950, 14, 343-361.
- Koppitz, E. M. Emotional indicators on human figure drawings of children: A validation study. *Journal of Clinical Psychology*, 1966, 22, 313-315.
- Masling, J. The influence of situational and interpersonal variables in projective testing. *Psychological Bulletin*, 1960, 57, 65-85.
- Masling, J. Role-related behavior of the subject and psychologist and its effects upon psychological data. In D. Levine (Ed.), *Nebraska symposium on motivation*. Lincoln, Nebraska: Univer. of Nebraska Press, 1966. Pp. 67-103.

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Orne, M. T. On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist*, 1962, 17, 776-783.

Rosenthal, R. *Experimenter effects in behavioral research*. New York: Appleton-Century-Crofts, 1966.

Sheldon, W. H., Dupertuis, C. W., & McDermott, E. *Atlas of men*. New York: Harper & Bros., 1954.

Starr, S. Reliability of the Draw-A-Person Test in projective psychology. Unpublished master's thesis, Washington State Univer., 1954.

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Note on the Height of Draw-a-Person Figures by Male Alcoholics

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This study investigated a hypothesis generated by Machover (1949) that alcoholics will draw same-sex figures smaller than normals. The specific hypothesis of this study was that male alcoholics would draw males smaller than females since more anxiety is attached to their own body image. A previous study suggested that anxiety or threat produce constriction in the size of drawings (Craddick, 1963).

Heights (in mm.) of male and female drawings by 200 male alcoholics (age range from 30-48 years) admitted to the Valley of Hope Center were measured. Mean height of the male drawings (133.4, SD-48.7) was compared to that of the female figures (141.8, SD-49.3), using a *t* test for repeated measures. The resul-

tant *t*-3.4 was significant at better than the .01 level. These results support the hypothesis that male alcoholics will draw male figures smaller than female figures.

REFERENCES

- Craddick, R. A. Size of Halloween witch drawings prior to, on, and after Halloween. *Perceptual and Motor Skills*, 1963, 16, 235-238.
- Machover, K. *Personality projection in the drawings of the human figure*. Springfield, Illinois: Thomas, 1949.

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Development of a Projective Measure of Perceived Locus of Control

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Summary: A procedure for evaluating the internal-external (I-E) control dimension from TAT narratives was developed. Internally and externally oriented Ss, as defined by scores on the forced choice I-E scale, differed significantly in the expected direction in TAT ratings of experienced control. Scores on the projective instrument correlated significantly with scores on the questionnaire, and with the former technique it was possible correctly to categorize 80% of Ss according to I-E scale scores. The newly devised instrument demonstrated adequate discriminant validity.

A number of writers have reported a wide range of individual differences in the extent to which persons believe they are able to control and are responsible for the events which occur in their lives. On one extreme, are those individuals who ascribe all things that happen to them to their own actions (internal control), while on the other, are those persons who interpret events as being governed by such outside forces as fate, luck, impersonal social pressures, or powerful others (external control). This psychological variable has been called internal versus external control of reinforcement.

Recent reviews of the literature (Lefcourt, 1966; Rotter, 1966) relating to the internal-external (I-E) control construct have shown its utility in predicting behavior in a variety of laboratory and social situations. The major proportion of these studies have employed the forced choice version of the I-E scale developed by Rotter, Liverant, and Crowne (1961). This extensive body of research has successfully demonstrated the viability and heuristic value of the control construct. Nevertheless, the range of applicability of the variable has been restricted to some degree by inherent limitations in the present scale. Coan (1966) has proposed that the test could be improved if items were varied systematically with respect to several aspects of external forces, particularly with regard to whether they are social, physical, or indeterminate and whether they are benevolent, malevolent, or indifferent. The I-E scales does not provide these finer discriminations. Coan has also suggested that questionnaire items alone may not be sufficient to tap all

major aspects of experienced control and that other kinds of test materials might be necessary for a fuller understanding of the construct. Despite the shortcomings of the forced choice scale, however, there has been relatively little interest shown in exploring new procedures for investigating individual differences in experienced control. A notable omission, especially in light of the widely accepted construct validity of this dimension, is the virtual absence of projective measures of the variable. Accordingly, the primary goal of the present investigation was the development of a scoring procedure for evaluating internal-external control in TAT narratives.

While scoring systems specifically concerned with the I-E dimension in projective techniques have not received much attention, a number of rating procedures designed for evaluating TAT content focus upon quite similar variables. Murray's (1943) need-press analysis and Stein's (1955) further elaboration of the approach, for example, provide a method by which to judge the comparative strength of forces emanating from the TAT hero and the forces arising from the environment. In this manner the general competency of the principal figure in the stories can be assessed. In his book, Shneidman (1951) presents a diversity of interpretative systems including some methods which attempt to quantify certain aspects of apperceptive themes along I-E related dimensions. A variable most similar to the control construct, however, is one studied by Witkin and his co-workers (Witkin, Lewis, Hertzman, Machover, Meissner, & Wapner, 1954) who endeavored to rate the extent of self-asser-

tiveness of TAT figures in coping with environmental and intrapersonal conflicts. Stories were rated on a three-point scale as either "self-assertive," "neutral," or "unassertive," according to the capacity of the principal character in dealing actively with situations and in his realistic acceptance of his own needs. This scoring procedure provided the foundation for the rating method developed in the present investigation.

METHOD

*Subjects*¹

A group of forty female psychiatric nursing students ranging in age from 19 to 22 years served as Ss. One to two weeks after a group administration of the forced choice version of the I-E scale, students were individually requested to write stories to seven standard TAT cards. The cards were numbers 1, 2, 4, 6GF, 9GF, 12F, and a card portraying a psychotherapeutic relationship (Reznikoff, Brady, & Zeller, 1959). The usual instructions were given and the women were allowed five minutes per story.

Thematic Rating of I-E

A detailed manual was developed for rating the internal-external control variable along a five-point continuum. While the major content of the manual was based largely on the author's understanding of the theoretical construct, additional suggestions and modifications followed from attempts to rate a number of TAT records of pilot individuals obtaining extreme scores on the objective version of the I-E scale. Many stories were selected from this preliminary work, and from Witkin's (Witkin et al., 1954) book, for inclusion in the manual as illustrations of the scoring method. Examples were chosen to represent varying points along the I-E continuum as well as to highlight a wide range of scoring problems; in all instances the ratings were carefully explained. Stories were evaluated according to the following general criteria:

Rating (5) *Considerable Degree of External Control*. A perception of positive and/or negative events as being the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of forces surrounding the principal character. Stories in which the main figure encounters numerous obstacles, hazards, or conflicts in the face of which he typically fails, are interpreted as reflecting a generalized expectancy of undesirable external control. In more positive terms are those stories in which the hero is portrayed as the passive recipient of gratuities or as succeeding largely through the intervention of good fortune. What is important for a rating of external control is the relative absence of self-initiated, responsible action or personal mastery. Instead, the central figure is viewed as almost powerless in the face of favorable and/or unfavorable events or as unable to overcome life's dilemmas. There may be some attempts to use fantasy to escape from intolerable situations, but few efforts to solve problems realistically are shown.

Rating (4) *Moderate Degree of External Control*. The features described in the above category appear with less intensity, but the principal character is still regarded as displaying little personal control over events.

Rating (3) *Neutral*. Aspects of both internal and external control are evident with some self-initiated, productive behavior in the context of a representation of events as determined partly by uncontrollable external forces or agents.

Rating (2) *Moderate Degree of Internal Control*. A perception of positive and/or negative events as being a consequence of one's own actions and thereby under personal control. The principal figures are seen as coping with problems and conflicts in a competent, self-determined fashion. If the hero should fail in a difficult situation, or make a mistake, he accepts full responsibility for the outcome.

Rating (1) *Considerable Degree of Internal Control*. The central figures are depicted as highly competent and in control, or at least responsible for, whatever happens to them. The features described in the above category appear with greater clarity.

Rating (0) *Irrelevant*. The story fails to provide clues for a rating of internal-external control. The subject either cannot produce a story or else the narrative is simply a picture description.

These criteria were used in rating each of the stories for the entire sample of forty student nurses. In addition, each girl was given an average rating based on seven TAT cards. A random sample of ten protocols was then selected for a check on

¹ The author expresses his gratitude to Miss Doris Moorhouse and to members of the Department of Nursing Education, Institute of Living, for offering their students for this investigation.

interjudge reliability.² The product-moment correlation between the two judges for the seventy individual stories, seven cards for ten Ss, was .53 ($p < .01$). Agreement between the interpreters on average scores for the ten TAT protocols was examined by means of the Spearman rank order procedure; a correlation of .82 was highly significant ($p < .01$). Ratings assigned to individual stories by the two judges were generally within one scale point of each other, and although the judges often differed in terms of who gave the higher rating, the scores were largely on the same end of the I-E continuum; this agreement is reflected in the Spearman correlation.

RESULTS

On the basis of a median split, the I-E scale was used to classify the forty psychiatric nursing affiliates as either "internals" or "externals." An analysis of variance, mixed design (Myers, 1966), was then performed to compare these groups in their ratings on seven TAT cards. Examination of Table 1 reveals that the groups differed substantially, with internals reporting significantly more TAT narratives manifesting a belief in personal control. In contrast, externals more frequently produced stories thought to represent a generalized expectancy of outside control. That is, externals more often

Table 1
Analysis of Variance Summary

Source	SS	df	MS	F
Total	412.56	279		
Between S	113.67	39		
A (I-E)	33.95	1	33.95	16.17*
S/A	79.72	38	2.10	
Within S	298.89	240		
B (cards)	12.35	6	2.06	1.69
AB	9.05	6	1.50	1.23
SB/A	277.52	228	1.22	

* $p < .01$

told stories characterized by a perception of positive and negative events as being the result of luck, fate, as under the influence of powerful others or as basically unpredictable.

With this projective instrument it was possible to correctly classify 80% of the students according to their scores on the I-E scale. The overall correlation of .44 between the questionnaire and the newly devised projective measure of the same dimension was significant ($p < .01$).

The analysis of variance summarized in Table 1 also shows that there was no overall effect due to different TAT cards. That

is, an approximately equal number of internal and external ratings occurred for each of the seven cards across the forty subjects. Nevertheless, two of the cards proved to be of greater efficiency in differentiating among students representing opposite attitudes toward personal control; these were card 9GF ($t = 3.14$, $p < .01$) and card 6GF ($t = 2.65$, $p < .05$). For the remaining five cards average ratings for internals versus externals were in the anticipated direction but failed to reach significance.

As one check on the discriminant validity of the projective measure of internal-external control, average scores for the seven cards were correlated with a variety of academic and practicum grades available on these students; none of these statistical relations reached statistical sig-

² Mr. J. Herbert Hamsher served as judge and in addition contributed to the organization of this paper. For his assistance the author is grateful.

nificance. An additional assessment of discriminant validity was made by having two experienced clinical psychologists³ sort a random sample of twenty TAT protocols into two equal groups in terms of the relative mental health characterizing the storytellers. No relationship between judgments of emotional adjustment and scores on either of the measures of internal-external control were obtained; interjudge agreement was perfectly concordant with chance expectations. Moreover, internal and external scores were dispersed nearly equally among the health and unhealth ratings. Even in those cases where the two judges agreed regarding level of adjustment, the I-E scales were not systematically distributed. In sum, these findings demonstrate that the projective measure of perceived locus of control possesses comparative independence from measures of both intellectual competence and emotional instability. These results are consistent with those found for the questionnaire (Rotter, 1966).

DISCUSSION

The relative success of this projective instrument not only lends construct validity to the internal-external control variable, but also provides a technique which may prove helpful in overcoming some of the short-comings inherent in the questionnaire. The more unstructured nature of the projective measure, for example, gives it the possible advantage of providing increased sensitivity to individual and situational differences. It has been previously argued (Coan, 1966) that the I-E scale focuses too narrowly on social and political events and incorporates relatively few statements regarding personal habits, traits, goals, or life styles. In contrast, the TAT procedure allows Ss to introduce a broader spectrum of situations and responses, including the significant interpersonal and intrapersonal concerns not tapped by the questionnaire.

It is also important to note that the projective measure of the control dimen-

sion has a potentially wider range of applicability, for those investigators interested in working with psychiatric populations will in all likelihood feel less hesitation in including the TAT in a test battery than is the case for the forced choice scale. Despite the intrinsic theoretical significance of experienced control within a clinical population, research in this area has been meager.

One promising area for investigation within a psychiatric setting is the relationship between particular symptom patterns and general cognitive styles. Several authors have implied the association between specific defense mechanisms and variations in perceived personal control (Lefcourt, 1966; Rotter, 1966). Utilizing the TAT rating procedure described in the present study it may be possible to explore this area more fruitfully.

REFERENCES

- Coan, R. W. Research strategy in the investigation of personality correlates. Unpublished manuscript, University of Arizona, 1966.
- Lefcourt, H. M. Internal versus external control of reinforcement: A review. *Psychological Bulletin*, 1966, 65, 206-220.
- Murray, H. A. *Thematic Apperception Test manual*. Cambridge: Harvard University Press, 1943.
- Myers, J. L. *Fundamentals of experimental design*. Boston: Allyn & Bacon, 1966.
- Reznikoff, M., Brady, J. P., & Zeller, W. The psychiatric attitudes battery: A procedure for assessing attitudes toward psychiatric treatment and hospitals. *Journal of Clinical Psychology*, 1959, 15, 260-265.
- Rotter, J. B. Generalized expectancies of internal control of reinforcement. *Psychological Monographs*, 1966, 80, (1, Whole No. 609).
- Rotter, J. B., Liverant, S., & Crowne, D. P. The growth and extinction of expectancies in chance controlled and skilled tasks. *Journal of Psychology*, 1961, 52, 161-177.
- Shneidman, E. S. *Thematic test analysis*. New York: Grune & Stratton, 1951.
- Stein, M. J. *The Thematic Apperception Test*. Cambridge, Mass.: Addison-Wesley, 1955.
- Witkin, H. A., Lewis, H. B., Hertzman, M., Machover, K., Meissner, P. B., & Wapner, S. *Personality through perception*. New York: Harper & Brothers, 1954.

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Holtzman Inkblot Technique in Acute Experimental Alcohol Intoxication

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Summary: Fifteen HIT cards were administered to 12 Ss before and after paired placebo and alcohol intravenous infusions in a Latin-square cross-over design. Separate sets of cards were used for placebo and alcohol infusions with cards from the A form administered before and the counterpart cards from the B form after each infusion. A significant increase in score in color was noted with the low level of intoxication as compared with placebo infusion. There were no significant differences between placebo and alcohol infusion on other HIT variables. Collateral data from previous alcohol intoxication experiments and other HIT studies suggest that the increase in color may be related to change in affect which accompanies the intoxication.

Alterations in a variety of psychological functions are well known concomitants of alcohol intoxication and many of these alterations have been subjected to thorough experimental study. Few attempts have been made to explore experimentally certain alterations in ego function which are basic to many psychodynamic theories of alcoholism. Abraham (1926) postulated that alcohol intoxication allowed the release of previously repressed homosexual strivings and more recent psychoanalytic (Blum, 1966) and psychodynamic (Levy, 1958) theories of alcoholism though less specific as to the drive aggregates, still rely upon the mechanism of release of ego alien material. McGuire, Stein, and Mendelson (1966) labelled behavior which emerged during experimental alcohol intoxication as "ego syntonic."

If the personality changes observed during intoxication are indeed a manifestation of the emergence of previously repressed drives then intoxication should produce an alteration in performance on projective tests. Inkblot techniques would appear to be appropriate instruments for evaluation of these effects of alcohol.

The few studies which have been done suggest that there are substantial alterations in inkblot perception with intoxication. Kelley and Barrera (1941) reported a pronounced trend toward increased color response and poorer form level on the Rorschach in Ss after alcohol intoxication. Cohen and Escher (1965) compared Form A Holtzman Inkblot Technique (HIT) scores of four groups of Ss under different experimental conditions; solitary and group drinking situation, and

alcohol and placebo condition. The intoxicated Ss scored significantly higher on rejection, color, and animal variables and lower on form definiteness, form appropriateness, human, integration, movement, penetration, barrier and popular variables than did the placebo Ss.

The results of these studies are difficult to evaluate because they are defective as psychopharmacological experiments. An adequate experiment requires before and after drug and placebo testing on the same S. Since alcohol is metabolized rapidly and at a constant rate, the tendency for a rapid decrease in level of intoxication following the point of maximum blood level is most marked in experiments using low levels of intoxication. This quality of the drug imposes time limits on the post intoxication testing. The social implications of drinking and the stimulus of taste, smell and deglutition may contribute as much to the response to alcohol as the intoxication itself. It is therefore desirable to evaluate or control for these variables in experiments with this drug.

The present study is an attempt to adapt the HIT to meet the requirements of a psychopharmacological experiment. Administration of alcohol intravenously eliminates the variables of the social implications of drinking and the stimulus of ingestion, and permits better control of dosage and more effective placebo substitution. A number of inkblots were used which would allow completion of testing within 15 minutes of the point of maximum intoxication. It was predicted that intoxication would be accompanied by an

increase in score on color and a decrease in score on form definiteness and form appropriateness.

Method

Subjects

The paid volunteer Ss were 12 white male nonprofessional employees of the VA Hospital. They ranged in age from 26 to 50 years (mean 40.9 yrs.). Full-Range Picture Vocabulary (Ammons & Ammons, 1948) I.Q. scores ranged from 89 to 118 (mean 101.5). The Ss were told only that the drug or drugs which might be used in the infusions were commonly used and that the procedure was not expected to be dangerous or unpleasant.

Procedure

Each S received two infusions on separate days approximately one week apart. One of the pair of infusions consisted of one liter of alcohol 5% - dextrose 5% in water (alcohol); and the other consisted of one liter of dextrose 5% in water (placebo). The alcohol dose was equivalent to 3-1/3 ounces of 100 proof beverage. Six Ss received the alcohol infusion on the first experimental day and the other six received the placebo infusion first.

On the day of the experiment the S had his usual lunch and at 2:30 p.m. the pre-infusion HIT was administered. Polygraphic leads (EKG, GSR, respiration) were then applied and at 3:00 p.m. the infusion was started in a right arm vein through a polyethylene catheter. With the S recumbent the solution was infused at a uniform rate over a one-hour period. A breath alcohol sample was taken two minutes after termination of the infusion. The post-infusion HIT was administered immediately following the breath sample.

Seventeen HIT cards were presented at each testing as follows: XY1A - 15A before and XY1B - 15B after alcohol, and XY31A - 45A before and XY31B - 45B after placebo.¹ The test was administered by the author who read verbatim the suggested instructions from the Holtzman

Inkblot Technique Administration and Scoring Guide (Holtzman, 1961) to each S prior to each pre-infusion test. The Ss were seated at a desk in the laboratory for pre- and post- infusion testing and responses of the cards were recorded by a female technician seated behind the S.

The change in score on each HIT variable with placebo infusion was compared with alcohol infusion using analysis of covariance. The analysis of covariance method was employed in order to handle the difference in baseline HIT scores which might occur because of the use of different sets of cards for placebo and alcohol infusion.

Results

Most of the Ss appeared mildly intoxicated after the alcohol infusion but none showed slurring of speech or unsteadiness in gait. The blood-alcohol levels (range 40-90 mgm%, mean 64.9 mgm.%) were consistent with a mild degree of intoxication. Post-alcohol HIT testing required from 1.9 to 10.2 minutes (mean 4.6 min.). The percepts reported for the four presentations of the XY cards were identical in nine patients and very similar in the other three patients.

The mean color score increased from 3.3 to 4.8 with the alcohol infusion and decreased from 3.9 to 2.2 with the placebo infusion. The analysis of covariance indicated that this difference between alcohol and placebo was significant ($f = 6.37$ with 1, 21 d.f., $p < .05$). There were no significant changes with alcohol infusion on any other HIT variables and no other significant differences were noted between alcohol and placebo infusions.

Discussion

The increase in color response is in agreement with the findings of other studies of the effects of intoxication on inkblot percepts. The interpretation of these findings by certain Rorschach theorists would be consistent with many common notions about the effects of alcohol intoxication. The tendency to use color indicated to Rorschach (1942) affective lability and impulsiveness, to Piotrowski (1957) a tendency to respond to environ-

¹ This method was suggested for this study by Wayne H. Holtzman in personal communication.

mental stimuli, and to Schachtel (1943) a greater immediacy in the expression of affect. An increase in color response, interpreted according to these theories, might suggest changes in personality function which are commonly associated with alcohol intoxication, i.e., more impulsive, more gregarious, less inhibited in the expression of affect. These theorists would, given these data on a drug, likely predict many of the changes in behavior actually observed with intoxication.

Unfortunately, there is little experimental evidence to support the concepts of the color enthusiasts among Rorschach theorists. The findings of the studies reviewed by Baughman (1958) cast serious doubt on the relevance of color as a significant determinant in inkblot percepts. Though Holzberg and Schleifer (1955) have questioned the validity of the findings of many of these studies, there is at present little experimental basis for a conclusion about the meaning of an increase in color response.

In view of the uncertainty about the meaning of color it would have been desirable to have concurrent evaluation such as an adjective check list mood scale in the present study. Concurrent evaluation was not considered feasible in the present experiment but some collateral data from previous alcohol intoxication experiments and other HIT studies suggest that the increase in color may be related to change in affect which accompanies the intoxication. Mosely, Duffy and Sherman (1963) found that depressed patients treated with antidepressant drugs had a significantly greater increase in HIT score than did patients treated with placebo. Mayfield and Allen (1967) using the Clyde Mood Scale in place of the HIT in an experimental procedure identical to that employed in the present study found a significant decrease in the depression factor in a group of Ss similar to those in the present study. Further study using these same experimental techniques might be useful in verifying hypothesis generated by the present study. For example, Mayfield and Allen (1967) found that depressed Ss had profound improvement in several areas of affect. Mayfield (1968) found that Ss had a significantly greater im-

provement in affect with intoxication while depressed than they did when intoxicated after remission of depressive symptoms. Comparing the change in color response with intoxication in groups of Ss with predictable differences in affective response might help clarify the issue of the color-affect relationship.

The results of the present study are perhaps most remarkable for the minimal change in percepts seen with intoxication. The use of an abbreviated form of the HIT may have contributed to the finding of minimal changes. Herron (1963) found no significant differences between a 30-card version and the 45-card series but doubtless a 15-card set does impose limitations on the sampling of perceptual behavior. Some restrictions of this sort are inevitable in experiments of this kind but this limitation can be minimized by selection of cards when evaluating specific inkblot variables. In the present study the placebo and alcohol card sets were by chance reasonably well-matched for color (alcohol = 11 chromatic cards, placebo = 10 chromatic cards) but a more satisfactory study of color could be designed by selecting all chromatic cards for each set.

The finding of so few changes in inkblot percepts may merely indicate that this projective technique is a poor measure of substantial alteration in function which occurred with the experimental intoxication. The finding of minimal percept change is however consistent with the behavior of these Ss with respect to alcohol for they have not manifested excessive drinking or unusual behavior when intoxicated. More important to the understanding of alcohol and alcoholism would be the comparison of changes in normal Ss with those of Ss with well-defined psychopathology, Ss with unusual behavior with intoxication, and alcoholic Ss. The present study shows that inkblot techniques can be adapted to meet the requirements of an acute psychopharmacological experiment. Their potential value in this important area recommends further study.

REFERENCES

- Abraham, K. The psychological relation between sexuality and alcoholism. *Internat-*

- tional Journal of Psychoanalysis*, 1926, 7, 2-10.
- Ammons, R. B. & Ammons, H. S. *Full-range picture vocabulary test*. Missoula, Mont.: Psychological Test Specialists, 1948.
- Baugham, E. E. The role of the stimulus in Rorschach response. *Psychological Bulletin*, 1958, 55, 121-147.
- Blum, E. M. Psychoanalytic views of alcoholism. *Quarterly Journal Studies of Alcohol*, 1966, 27, 259-299.
- Cohen, R. & Escher, H. Die Wirkung von Alkohol auf die Leistung im Holtzman-Inkblot-Test. *Diagnostica*, 1965, 11, 121-130.
- Herron, E. W. Psychometric characteristics of a thirty-item version of the group method of the Holtzman Inkblot Technique. *Journal of Clinical Psychology*, 1963, 19, 450-453.
- Holtzman, W. H. *Holtzman Inkblot Technique administration and scoring guide*. New York: The Psychological Corp. 1961.
- Holzberg, J. D. & Schleifer, M. J. An experimental test of the Rorschach assumption of the impact of color on the perceptual and associative processes. *Journal of Projective Techniques*, 1955, 19, 130-137.
- Kelley, D. M. & Barrera, S. E. Rorschach studies in acute experimental alcoholic intoxication. *American Journal of Psychiatry* 1941, 97, 1341-1364.
- Levy, R. I. The psychodynamic functions of alcohol. *Quarterly Journal Studies of Alcohol*, 1958, 19, 649-659.
- Mayfield, D. & Allen, D. Alcohol and affect: A psychopharmacological study. *American Journal of Psychiatry*, 1967, 123, 1346-1347.
- Mayfield, D. Psychopharmacology of alcohol I. Affective change with intoxication, drinking behavior and affective state. *Journal of Nervous and Mental Disease*, 1968, In Press.
- McGuire, M. T., Stein, S., & Mendelson, J. H. Comparative psychosocial studies of alcoholic and non-alcoholic subjects undergoing experimentally induced ethanol intoxication. *Psychosomatic Medicine*, 1966, 28, 13-26.
- Moseley, E. C., Duffy, R. R., & Sherman, L. J. An extension of the construct validity of the Holtzman Inkblot Technique. *Journal of Clinical Psychology*, 1963, 19, 186-192.
- Piotrowski, Z. A. *Perceptanalysis*. New York: McMillan, 1957.
- Rorschach, H. *Psychodiagnostics*. New York: Grune & Stratton, 1942.
- Schachtel, E. G. On color and affect: Contributions to an understanding of Rorschach's Test. II, *Psychiatry*, 1943, 6, 393-409.
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Book Reviews

Rapaport, David, Gill, Merton M., & Schafer, Roy. *Diagnostic Psychological Testing* (Rev. Ed. by Robert R. Holt). New York: International Universities Press, 1968, pp. 562. Price \$15.

This classic in the field of psychological assessment received a mixed review when it was first published by Year Book Publishers of Chicago in 1945-1946 as two volumes. On the one hand, many recognized that the book contained valuable insights into test interpretation, and it was hailed as an important addition to the field. On the other hand, statistically-minded reviewers pointed out numerous inadequacies in the design and statistical analysis used to support the clinical interpretations. According to Holt, the editor of the new one-volume edition, both sides were correct. Clinicians accurately recognized that something new was being presented which would aid greatly in test interpretation. But, statisticians also correctly grasped the fact that here was another attempt at research which was limited by serious flaws of a quantitative nature. Holt chose to delete the questionable studies from the current revision, and to let the revised book stand or fall on the test interpretations which, after all, are why the book became respected in the first place. In addition to the usual editorial duties, Holt has added an interesting 44-page Editor's foreword, which is worthy of reading in its own right. Besides discussing the revision, Holt has some intelligent things to say about training of clinical psychologists, the diagnostic enterprise, and other related issues.

Why is the Rapaport et al. effort so highly respected? Surely others have written good books on test interpretation. Yet, this is not just another good book in the area. Historically, something new was added which was a creative contribution to the area of diagnosis. This something new is the clinical interpretation provided for I.Q. tests, specifically the Wechsler-Bellevue Scale. Since a good individual I. Q. test is really a standardized interview, the yield should be great. Yet, most have contented themselves to get little more than an I. Q. score from such testing, with perhaps a few additional comments about the subject's being a little anxious. It remained for the present analysis of diagnostic implications of psychological testing to provide the bases on which reasonable personality analyses could be obtained from I. Q. testing.

There are two points of relevance concerning the manner in which the authors use the I.Q. test. First, the Wechsler-Bellevue has been greatly

supplanted by the Wechsler Adult Intelligence Scale and the Wechsler Intelligence Scale for Children, yet the book deals with the old W-B. This is not a great problem because there is (a) much similarity between the W-B and the new tests and (b) Holt has added a chapter in an attempt to make matters more current. Second, since the authors are interested in clinical interpretations as well as mere I. Q., they depart from the standardized manner of testing on occasions, e. g., by allowing a person to get credit for an item if he recognizes the correct answer while working on a later subtest. Departure from standardized testing procedure means that (a) richer clinical material may be obtained and (b) it may be difficult to compare the obtained I. Q. of your subject with that of other people who were tested in the more standard fashion.

Although the major usefulness of the present volume is in the practical diagnosis of personality, i. e., studying the individual client, additional information is provided on the "real nature" of the particular subtests. For example, it is pointed out that digit span is a test of attention, and if there is impairment in this area the subject will not be helped by his concentration abilities. On other subtests, concentration is very important, and low concentration is held to lower the person's score.

For specific diagnostic information obtainable from I. Q. testing the reader should read the book, as only a very general overview can be provided here. In addition to the I. Q. test, the book presents interpretive information on a battery of tests used by the Menninger Clinic: the Babcock Story Recall Test, the Sorting Test, the Word Association Test, the Rorschach, and the Thematic Apperception Test. All are handled well, and the user or potential user of these instruments will find much of value. A second fact of importance is that by discussing in some detail tests which may not be used by an individual diagnostician, the authors may alert him to tests which he could profitably employ.

The reader most likely to profit from reading and studying this volume is the practitioner in psychiatry or psychology, i. e., one who sees patients as part of his daily routine, and diagnoses or therapeutizes them. For the researcher, although the book contains many statements stated in clear enough language to be tested (e.g. "A very mild manifestation of instability is seen when the subject offers a false reproduction which is meaningfully related to both the stimulus word and the original reaction" p. 225), the book has such a practical orientation that he is unlikely to be inspired to undertake testing of the various hypotheses advanced. The

researcher would more likely respond to a book which discussed hypotheses in the light of previous studies, and since this volume does not, it probably will not lead to a great many studies designed to support or refute its creative insights and speculations.

The preceding paragraph suggests an unfortunate dichotomy: researcher vs. practitioner. For one not to profit from the knowledge and insights of the other is to invite a limited outlook. Yet, the authors' attempt to subject their hypotheses to statistical tests met with such failure, according to Holt, that Rapaport felt that the errors could not stand in a revised or reissued book. Thus, Holt eliminated the studies from the present edition. It would appear that a happy marriage between a research orientation and clinical practice occurs too infrequently within any one person; while the book does lend itself to hypothesis testing, such testing is not likely to occur on any great scale, given the existence of the above-mentioned dichotomy.

In summary, this revision of a famous book has done a good job in that a 1089 page, two-volume book has been reduced to 562 pages while still retaining information of value for those concerned with diagnosis, in the broadest sense of the word. The information about I. Q. as a diagnostic tool is especially valuable, and the book has a wealth of information which will be especially useful to those faced with the problem of understanding people via psychological tests.

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Luria, A. A. *The Mind of a Mnemonist*. New York: Basic Books, 1968, pp. 176. Price \$4.95.

This short book by one of Russia's leading psychologists records A. R. Luria's observations of an individual "whose remarkable memory was one of the keenest the literature on the subject has ever described (p. 3)." Luria relates in a fascinating narrative, interlaced with direct anecdotal information and careful scientific observation, the powers of memory of a man referred to as S. Luria's meetings with S began in the 1920's and extend over a period of approximately 30 years. In their first encounter Luria presented long lists of words or numbers either verbally or orally. The behavior of S in these experiments is described by Luria in the following passage: "He (S) would close his eyes or stare into space, fixing his gaze on one point; when the experiment was over, he would ask that we pause while he went over the material in his mind to see if he had retained it. There-

upon, without another moment's pause, he would reproduce the series that had been read him (p. 10)."

Luria reports that he was unable to find a limit to the capacity nor to the durability of traces that S had maintained. Fifteen years after their first encounter, Luria asked without forewarning if S could recall a list of words presented in their first meeting. S did so without error.

The manner in which these feats of memory were accomplished is described through S's conversion of all material into visual or auditory images. In fact, all verbal information, whether meaningful or not, immediately became a visual or auditory sensation (synesthesia). S "distributed" the mental images along some roadway or within some scene and recalled them by "walking" the roadway or examining the scene. Occasionally errors of omission occurred which S attributed to his having placed the mental image (e.g. an egg) against a background from which the object failed to differentiate itself (e.g. a white fence). These omissions, then, were errors of perception rather than memory.

After becoming aware of the mental abilities S became a professional mnemonist and developed several techniques to avoid errors of omission in his presentations.

Perhaps the most fascinating goal of the book is a description of S's personality. Luria remarks that studies of other famous mnemonists (e.g. Inodi and Diamandi) failed to report about other psychological aspects of the person. While Luria does discuss the problems that S experienced due to his mental images (e.g. the inability to forget something committed to memory), only the last 10 pages of the book are devoted to the personality of S. Although several remarks about the personality of S are made, the majority of space is devoted to a discussion of the present lack of knowledge about personality variables.

Luria's description of S is presented in a style providing very enjoyable reading. Although the amount of information presented is small and sometimes rather unspecific, Luria does extoll the important aspects of the memory prowess of his subject. The value of this book for the understanding of memory process can be considered questionable, however, it would provide pleasant reading for any individual with a central or even marginal interest in memory.

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Lubin, Bernard, & Levitt, Eugene E. (Eds.)
The Clinical Psychologist: Background,

Roles, and Functions. Chicago: Aldine, 1967, xii & 370 pp.

This book is a collection of 51 articles dealing, as the title would suggest, with various aspects of clinical psychology. Most of the articles have been published before, coming mostly from periodicals of the last ten years. But while a number of them appeared in widely available journals, notably *The American Psychologist*, which leads the list with 17 articles, the sources of many would probably be relatively inaccessible to most of us, having been either of limited availability or circulation, or in some cases (e.g. *The Practical Lawyer* or the *Israel Annals of Psychiatry*) not too likely to be part of the usual reading diet of most American psychologists. In all, over 20 different sources are cited. Finally, two of the articles have not been published before, having been written at the editors' request. A sizeable array of material, then, is presented, much of it heretofore relatively inaccessible.

The book is arranged in six parts. Part I, "Historical Perspectives", presents three articles concerning the history of clinical psychology. These are the historical accounts of Watson, which appeared in *The Psychological Bulletin* in 1953, and Rotter's, from Koch's collection of ten years later; finally there is the 1947 report of the Shallow Committee on clinical training. The editors state that this last was included because of its great influence on the subsequent course of clinical psychology, which view seems most reasonable. Withal, the selections here seem judiciously chosen.

Part II, "Training and Background", is concerned with a number of aspects of training of clinical psychologists. The first four articles tend to go together; they come from a conference on training held prior to the American Psychological Association convention in 1965. They are thus a product of fairly recent thinking in this area. Generally of systematic and thoroughgoing concern, they are somewhat uneven when taken together in this fashion. Some collating or editing might have been indicated.

The editors of the present volume have evidently chosen to avoid the problems that may arise when one edits articles selected for a collection like this. None of the articles seems to have been edited in any way, with the trivial exception of the title of the Schofield article mentioned below. Apparently selections were taken exactly in their full original form or not at all. This is probably a defensible procedure, but the book is occasionally choppy and overlapping on account of it.

The other five articles in this part present a diversity of concerns and views on training. All recent, they seem a soundly chosen array. The last article, which originally appeared in *The Ohio Psychologist*, is a stimulating diatribe by Albee against the usual medical-setting model.

Part III, "Roles and Functions", is the longest and most diverse, rather hard to describe and evaluate at reasonable length, except broadly. A succession of 20 articles is presented,

each dealing with differing aspects of the more important roles and activities of clinical psychologists. Aspects of the traditional major functions of diagnosis, psychotherapy, and research are presented first. The material here impresses us as rather uneven. Klopfer's and Sundberg's articles on diagnostics are felicitous choices from the rather large array of possible ones. However, the choice of Ayllon's behavior-modification study as the main article dealing with psychotherapy seems curious. The editors state that it was chosen because this type of therapy has been developed by psychologists, which is sound enough. However, it seems arguable whether it should get the exclusive importance this implies. The article itself is an ably written and quite interesting account of a successful experiment in modifying three kinds of undesirable behavior in one psychotic patient (with, e.g., a diverting graph showing towel-hoarding behavior, with the ordinate running up to 650 towels in the patient's room). Aside from this one experimental article seeming lonely in this book, it does seem that a broader account of behavior-modification therapy in general, would have been a more appropriate choice. Ayllon himself has written one, and there are others.

The selection of Schofield's paper as the choice to represent research activities of clinical psychologists nowadays seems rather unsatisfactory. This paper was the last of a series of yearly summaries of clinical research. Ably done, it nevertheless presented only that one year's activities, and that year is 15 years ago now. (Curiously, the present editors omit the year from the title of the article, which originally read, "Research in Clinical Psychology: 1952".) They do state (p. 141) that, unfortunately, "a more current account of the research interests of clinical psychologists is . . . not available", which really seems true only if one means a survey just like Schofield's.

The rest of this section has a number of accounts of the variety of roles and settings in which clinical psychologists often operate now. As the editors say, these do not exhaust the list, but they seem a good selection of generally competent articles.

Part IV, "Interprofessional Relations and Communication", deals, as would be expected, with relations with psychiatry and social work, especially the former. There is also an article considering how the legal profession might benefit from psychologists' services. There are eight articles, two of them commissioned for this book. They impress us as being very well chosen, both for their individual merits and for the way they form an integrated overview of this often controversial area. This is one of the most well-contrived portions of this book, and was virtually unavailable heretofore, since even of the articles that are reprinted, the original sources of many would be unlikely to have been seen by most psychologists.

Part V, "International Aspects of Clinical Psychology", starts with an article by David

giving brief vignettes of clinical psychology in the several areas of Europe. It is followed by six other articles, each descriptive of one area: Canada, Britain, Austria, West Germany, Israel, and the Soviet Union.

Finally, Part VI, called "General Information", consists of three articles which the editors describe as not fitting logically into any of the previous sections, yet clearly of consequence to the field of clinical psychology. All are from *The American Psychologist*; they deal with ethical standards, the ABEPP diplomate, and state certification and licensing. Though probably already familiar to many of the likely readers of this book, they are of some importance, and certainly seem to merit inclusion in such a final section. At that, they may not be entirely familiar to many beginning graduate students or to non-psychologists who may read this book.

This brings us to a concluding question: for whom is this book intended, or for whom is it most suitable? One use that comes immediately to mind is as a text, e. g. as a supplementary source book for beginning graduate students in this area. It is our feeling that it would be much less suitable as a main or basic text. Owing perhaps to the lack of suitable articles in certain areas (e.g., a post-Schofield account of clinical research), or to vagaries in selection, there are a number of omissions—areas too scantily covered for a basic text. But as a source of a really wide array of readings, many of them stimulating as well as informative, no better volume occurs to us.

It is likely that informed non-psychologists would find this book worthwhile, though again one has cautions about regarding it, alone, as the best basic introduction. And finally, it is very likely that many psychologists, while encountering much already familiar, would still find much that was new and worth perusing. We did.

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Abramson, Harold A. (Ed.). *The Use of LSD in Psychotherapy and Alcoholism*. New York: The Bobbs-Merrill Co., 1967, xxv & 697 pp, \$17.50.

This is an edited book of papers presented at the Second International Conference on the use of LSD in Psychotherapy, held at South Oaks Hospital, Amityville, New York, in May 1965. The first conference took place six years earlier. The second conference was more international in scope and included participants from Holland, Canada, Italy, England, Czechoslovakia, Denmark, Norway, Germany, as well as this country.

Social and paramedical aspects introduced the conference. This was followed by a section on the effects on test subjects of LSD, Sansert, and Psilocybin. The next part of the conference dealt with theoretical aspects of LSD therapy, including personality studies, and its value as adjunct in what is essentially psychoanalytically oriented psychotherapy.

The book provides, as an introduction, a much needed, though too little known, history of the human use of hallucinogenic agents. It is fascinating reading, and invaluable to anyone who is attempting to appreciate the highly emotional and frequently irrational public controversy that centers around LSD in this country. It is almost as though it had somehow been established that the use of these drugs was un-American and immoral, and that no indictment would be too grotesque to be believed.

The more scientific critics of the use of LSD in psychotherapy are well handled by the contributors jointly, but too lengthy to be summarized in this review. Hoffer and others review these as part of their contribution. Considering the occasionally almost bizarre comments made by learned critics, one can only concur with Hoffer's caustic observation that "the degree of hostile criticism varies inversely with the square of the distance from any first-hand experience and knowledge of the drug."

So widely do the contributors vary from one another that it is difficult to define limits which would embrace them all, except in negative terms. The conference did not include, for obvious reasons, outspoken critics of the use of the drug. Neither were invited some of those who make the most exaggerated claims as to its unparalleled accomplishments. The selection of conferees seems to have been made largely from investigator-therapists, people concerned with careful evaluation of their findings. Each paper presented is followed by discussion, and it is in these discussions that the basic interests of the participants were revealed. The need for, or even possibility or desirability of, double blind research design was the subject of more spirited debate than any other topic discussed.

It would be expected that there would be a basic homogeneity among the conference participants. All concerned themselves only with the use of LSD in professional settings, always under direct and responsible supervision. All have had extensive experience with the drug and were convinced of its therapeutic potential. Their general feeling is well reflected by the statement of one: "It is my belief that we have (in LSD) a most valuable therapeutic tool when used on the right sort of patient, under the right circumstances." This opinion is based, collectively, on the use of LSD with many thousands of patients in clinical programs, many

of which have been carried on for several years. It would seem relatively unlikely that some new grave consequence of administering LSD under appropriate conditions will suddenly be found to exist that had never evidenced itself in the combined experience of these therapists.

The participants were not always in agreement. But points of disagreement stemmed from differences in treatment goal, treatment settings, patient population and theoretical orientation. Then, too, in only the most unusual situation is LSD used alone and not in combination with other forms of therapy. This leads not only to differences in therapeutic impact of LSD itself, but creates severe problems for those seeking to evaluate the impact of just one of the modalities.

There is quite general agreement that, in ways not yet understood, LSD seems to break down or loosen up the intrapsychic personality compartmentalization, and can lead, therefore, to significant reorganization and restructuring. Since ego boundaries have been created to serve and defend the personality, as well as determine the individual's perception of himself and others, the loss of these defenses is almost always accompanied by fear to a greater or lesser degree. For the individual unprepared for the LSD experience and ineffectively supported by others during the experience, this loss of defenses is frightening. As would be anticipated, the more rigid and defensive the subject, the stronger will be his defense of his ego when under the influence of LSD. The LSD experience thus serves to elucidate dynamics, and some therapists use it primarily as a means of perceiving the personality structure in advance of therapy and as a means of directing therapy.

This aspect is well presented in a paper by Stanislav Grof which some readers may find one of the most interesting in the book. Grof's studies have convinced him that the symptoms developed during LSD intoxication are highly specific, reflecting the patient's most important emotional problems and have a close connection with past and present life situations. Many others, in addition to this author, report that patients tend to move directly to the areas and to the topics which have, for them, the strongest emotional charge. "Transphenomenal Systems" is the label given to these ego constellations which assume prime importance in the development of symptomatology. These, it is believed, shape the contents of the whole LSD experience, and are basic in the formation of character traits. The LSD experience, this way understood, leads to a clarification of personality dynamics available by no other known techniques. Since LSD facilitates abreaction and a living through of these constellations, the experience can have important consequences for the patient's behavior and life attitudes. For

Grof, LSD is the only available means for rapid revelation and therapeutic reduction of these constellations.

Those who have used LSD as an adjunct to psychotherapy (psychoanalytic approach) are unanimous in the ways in which LSD facilitates: Consciousness is maintained throughout and memory of the experience is vivid; resistance is greatly reduced or overcome; regression is speeded up; recall of past events and recovery of repressed material is facilitated; transference is facilitated; abreaction promoted; capacity for introspection is enhanced; and, insights seem to come more rapidly. Although it is obvious from the above that the patient, his expectations, the therapist and his orientation and the relationship between these are all important to the results, it is generally agreed that LSD speeds up the therapeutic process. Clearly the euphoric nature of the experience leaves the patient very vulnerable to suggestion and it is clear that in some instances, at least, therapists strongly suggest specific insights as a technique of producing quick results.

The participants who reported on the psychedelic use of LSD were largely, though not exclusively, concerned with the treatment of the unremitting alcoholic. While varying somewhat in other aspects of treatment, the common element is the use of relatively large doses of LSD in an effort to promote a transcendental experience, a peak experience. A massive reorganization of personality can take place. LSD apparently bridges, at least temporarily, feelings of distrust for others and a feeling of oneness with others ensues. Significant new awarenesses can occur, and the individual can reorganize himself so that he is happier and more content.

Research evaluation of the effectiveness of any form of therapy presents difficulties. Adequate control groups, long term followup, and clear cut and significant criteria of improvement are requisites for such research. Significant differences between groups are usually not great, and frequently disappear with the passage of time. Even modest increases in rates or degree of improvement may result in very significant decrease and alleviation of human suffering.

It has been the Canadian investigators who have provided the bulk of data on the treatment of alcoholics with psychedelic therapy. Their subjects were those who had been confirmed alcoholics for many years and for whom other treatment techniques had failed. Patients were followed in some instances from 4 to 5 years following treatment. Criteria for rating adjustment as "much improved" or "improved" were rigorous. The results are impressive. For the 9-month period following treatment, about 50% remained dry and markedly improved in

emotional and social adjustment. To be sure, as the months pass, the percentage of "much improved" dwindles, to 31% at the end of 38 months, and to 25% at the end of 55 months.

A potentially significant contribution made by these investigators is the identification of the "Malvarian" alcoholics who do not respond to LSD until the Malvaria is treated or where treatment for Malvaria and alcoholism is concurrent. Since, according to their figures, Malvarians constitute 30% of any sample of long term alcoholics, LSD can be thought of as producing at least a 9-month period of abstinence in 5 of 7 long term alcoholics.

Two observations seem pertinent in evaluating these findings. In the first place, the LSD phase of treatment is seen as the beginning of personality restructuring and growth, not the end. The subject's new perception of himself and others may lead him to be treated differently by others, and the perceptions reinforced. It would seem undeniable that the acceptance of the "new self" by significant others will likely be a major factor in determining how effective, and for how long, LSD benefits will accrue. It is perhaps more astonishing that the subjects fared as well as they did.

Secondly, although LSD certainly provides no sure and certain cure for alcoholism, the success rates for this form of therapy exceed anything that has been accomplished by any other form. Where adequate controls have been used, the rate of success of the LSD-treated patients proved to be 1½ times that of the controls.

Although not presented in as great detail, the treatment effectiveness of LSD with patients other than alcoholics provides even more promising results. One study reported on a group of 67 patients of mixed diagnoses followed for 6 years; 72% recovered; 21% much improved; 4% slightly improved, 3% unimproved. On a similar patient population where an independent rating team collected data over an 8-year period, 64% were rated as recovered or greatly improved, 36% as moderately or not improved.

Psychological tests receive some attention. Pre- and post-testing with the MMPI in two studies showed a statistically significant drop on all MMPI scale scores except Ma. Retesting at a later date revealed a tendency for the scores to drift back in the direction of pre-treatment levels, but remained consistently lower than pre-treatment scores.

As is perhaps obvious from the above, this type of book is not easy to review. The reviewer can hardly attempt to evaluate separately the over 30 presentations and the discussions which follow. It is an excellent reference book. It is a readable book, which provides broad perspective. There is some inevitable duplication. The ref-

erences are grouped by section, which is unfortunate. It is difficult to understand why a book of this sort, costing as much as it does, would be published without an index.

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P.A. NEWS & NOTES

Anyone interested in doing some research using MMPIs and Figure Drawings of "normal" adult subjects? Melvin A. Gravitz (Park Lane Medical Building, 2025 Eye Street, N. W., Washington, D. C. 20006) has a large number of these tests and would like to hear from psychologists interested in doing collaborative research where such data would be of use. I'm sure that many of you have bemoaned the fact, as have I, that you didn't have any test protocols on "normal" subjects when doing research on these tests. Here's your opportunity!

James R. Whitman (Research Service, VA Hospital, Tacoma, Wash. 98493), is doing research relating the MMPI to length of stay and type of hospital discharge, and investigating personality characteristics associated with color vision defects. He would like to hear from anyone who is or has been doing similar work.

Mary Haworth (Res. Develop. Program, BSTB, NIMH, 5454 Wisconsin Ave., Chevy Chase, Maryland 20203) is developing a Primary Visual Motor Test (PVM) for use with young children from four through eight years of age. The test has been designed to serve two functions: (1) the assessment of visual motor development in the pre-school and early primary grades; (2) the evaluation of deviations in visual motor functioning during the developmental process, and at earlier ages than is possible with other presently available tests. The PVM test consists of 16 patterns which the child is shown, one at a time, and required to copy in designated spaces on protocol sheets. An objective and reliable scoring system has been developed. The test has been administered to a sample of 500 school children (100 at each age level) with equal numbers of

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Rorschach—the Man and the Test

EMIL OBERHOLZER

Published posthumously by Emil Oberholzer, Jr., with

Introduction by Arthur C. Carr

New York State Psychiatric Institute

Introduction

The contribution of Emil Oberholzer to "Rorschachiana" is well known and requires no detailed elaboration for readers of the *Journal of Projective Techniques and Personality Assessment*. With intimate knowledge of the life, work, and personality of Hermann Rorschach, Oberholzer contributed to the basic theoretical foundations of the test (Rorschach, 1921; Rorschach and Oberholzer, 1923). As a scientist, he showed that meaningful, valid conclusions could be deduced if data were analyzed appropriately. He demonstrated the applicability of the test to the many problems for which it is used today, including diagnosis of organic lesions (Oberholzer, 1931), and investigation of cross-cultural differences (Oberholzer, 1944). On the basis of his case reports, most of which have never been publicly available, Oberholzer's reputation as a clinician has grown increasingly since his death ten years ago. His systematic appraisal and organization of his unpublished clinical data have recently come to the attention of one of the editors (ACC), through the generous cooperation of Emil Oberholzer, Jr. Particularly interesting for *Journal* readers appears to be the following article, extracted from notes used for lectures presented at City College and the New York Psychoanalytic Institute. Combined and partly edited by Emil Oberholzer, Jr., the observations have interest not only for their historical value, but also because of their relevance to present day application of the Rorschach test.

Rorschach—the Man and the Test

What was the man like, whose merit it is to have shown such new possibilities of psychological testing? It is not by chance that the experiment of the interpretation of forms was invented by a man like Her-

mann Rorschach. He was not only a highly talented man, but one whose mind was open to everything, who was willing to examine things before he rejected them, and who throughout his life was as tolerant towards others as he was severe and critical of himself, listening to every objection and considering every critical remark that was to the point.

I remember a good illustration of his beautiful tolerance. A few months before his death, Rorschach heard a paper on the psychoanalytic aspects of the work of the Swiss pedagogue, Pestalozzi. It was a fairly uncritical paper in which analogy and unproved interpretations played too great a part, so that the paper was generally rejected. Rorschach commented on it in a few words. He noted that certainly there were mistakes in it, but he also expressed his thanks to the speaker because he had learned many things which he had not known. And indeed, he learned everywhere, even the Russian language in all its nuances when he was in Moscow after he had completed his medical studies. He learned everywhere, almost unaware of the things he appropriated by means of his enviable passive-attentive attitude. While in Russia, he worked in a private psychiatric clinic, where he studied the psychology of normal and abnormal Russians. At that time he was particularly interested in schizophrenics, the intended subject matter of his first monograph after the *Psychodiagnostik* (Rorschach, 1921).

In Switzerland, Rorschach worked in the mental hospitals of several cantons, each of which differs from the others in character and dialect. From his work in various sections of the country - the north, the northeast, and the central parts - he became intimately acquainted with the psychological differences among these parts, and acquired his knowledge of a sort of comparative psychology and psychiatry, which he utilized in his *Psychodiagnostik*.

He observed that racial differences were reflected in the test, whether the *S* tested was normal or psychotic, and in his book compared and contrasted in particular the normal and the schizophrenic population of the canton of Bern, where he worked in his earlier years, and that of Appenzell, where he held his last position and where he worked out the test. He saw that the differences in the test reflected the differences in the psychology of the people and the difference in their clinical pictures. The schizophrenic of Geneva, for instance, differs from his counterpart in the north-eastern section of Switzerland, and even within that section there are differences between the schizophrenics of Schaffhausen, which lies near the Rhine, and those of the cantons of Appenzell. Corresponding differences were found in the tests of persons with other mental disorders or with mental retardation. Since geographical and ethnic differences affect test results, we must select a population as homogeneous as possible if we want to establish a standard showing the average frequency of each factor in the test. Many misleading results and much of the controversy in regard to the test can be traced to the neglect of this problem.

Rorschach not only had excellent and comprehensive training in psychology and psychopathology and was not only an excellent psychiatrist whose case histories are works of art still worth reading, but he was also current on the history of civilization, so much so that he intended some day to teach a course on the history of the development of the mind. There is more than one reference to that effect in his *Psychodiagnostik*. Moreover, he was the only one among the younger Swiss psychiatrists who was well trained in anatomy, as can be seen from his study on the operability of the pineal gland. Finally, Rorschach was a psychoanalyst. He was grateful to psychoanalysis and emphasized that psychoanalysis, by increasing his understanding of the human mind, made him see many connections in the test which he would have overlooked without his psychoanalytic training. Indeed, it seems that those who are at home in psychoanalysis are better able to handle and utilize the test, provided they do not

stick to the content of the responses only. Generally, psychoanalytically oriented persons place too much stress on test content, considering it apart from the findings as a whole. Thus, they make an association experiment of the test. They forget that an evaluation of personality and a diagnosis can be made only by means of the formal categories of the test, never solely on the basis of the content.

In summary, Rorschach's open mind, his psychological training, his innate intuitive faculty (which underlies his research although it is not directly manifested in his *Psychodiagnostik*), his talent for characterizing psychic states and facts, his ability to grasp the quintessence of things by means of his great empathy,—all these are the psychological background of the beginning of his experiment.

Rorschach's original aim was to clear up some theoretical problems concerning apperception. He tested everybody he could reach. Of course, at that time what he used was not a test at all. He merely showed the many inkblots he had made in the course of time and saw what responses he obtained. He did it almost as a kind of pastime, using one or another of his cards. By testing more people, he became aware of the different reactions obtained, and of some common factors. He noticed that some people first considered the card as a whole, while others began with the details; that they reacted sometimes to colors and sometimes to forms, and that the majority of all responses were determined by the forms outlined in the cards. Still groping, he began to realize that there must be something behind the interpretations. In his earliest records, he mentioned two factors only: wholes and details were distinguished, as were forms and colors. Thus, an early record might thus read:

W: 7	F: 82%
D: 19	C: 18%

He later developed a third category: the kinesthetic response. This proved to be a discovery of the greatest consequence, for a comparison of the test record with the clinical findings showed that the kinesthetic responses were, in a sense, the opposite of the color responses. From

that time on we find, in addition to *W*, *D*, *F*, and *C*, the sign of those responses which were determined by movement (*M*). Almost at the same time he began to subdivide the detail responses, making separate classifications for interpretations of white spaces (*S*) and of the smaller or more unusual details (*Dd*). His computations of this period read as follows:

<i>W</i> :	6	<i>FM</i> :	10%
<i>D</i> :	16	<i>F</i> :	80%
<i>S</i> :	2	<i>C</i> :	10%
<i>Dd</i> :	4		100%

Total 28

Next came the differentiation between forms of good and bad quality and among the various color responses. First, color-form responses (*CF*) were separated from the primary color responses (*C*). At the same time Rorschach distinguished form-movement (*FM*) from movement-form (*MF*) responses; thus allowing for the fact that all kinesthetic responses involve an element of form: the form determines the interpretation while the kinesthetic element causes the interpretation to be conceived as a movement. It can happen that the form is more or less neglected and that the answer is determined predominantly by the kinesthetic element. The result is a poor movement response (*M*-), invariably an indication of a pathological condition. Rorschach later dropped the distinction between *M* and *F*, for it turned out to be too difficult to determine whether a movement response was determined mainly by the kinesthetic element. It was difficult enough to distinguish among the various color responses; with respect to movement responses we may be satisfied when we recognize a kinesthetic element in a response, and it is not rare that such an element is overlooked. By this time, Rorschach's computations looked like this:

<i>FM</i> :	1
<i>MF</i> :	2
<i>F</i> :	+20
	- 4
	= 80%
<i>CF</i> :	2
<i>C</i> :	1

A little later, the same case would have looked like this:

<i>M</i> :	3
	+20
<i>F</i> :	- 4
	= 80%
<i>FC</i> :	1
<i>CF</i> :	1
<i>C</i> :	1

By this time, Rorschach reckoned the ratio of plus and minus form responses in percentages, but he discontinued percentage figures for movement and color responses because he had found that the two elements were antagonistic to each other. Instead, he expressed the relationship of the two factors in terms of a proportion.


One more element was brought in. Some responses, hitherto classified as details, were now known as *DD*, a neutral formula, which Rorschach later called oligophrenic details (*Do*), because he frequently found them in the test results of the mental defective. Where normal people see a whole human being or an entire animal, oligophrenics often see but a part. In Card III, for instance, where normal persons would often see a person, a mental defective may merely see a man's head. By this time, the column which once distinguished merely between *Ws* and *Ds* looked like this:

<i>W</i> :	6
<i>D</i> :	14
<i>S</i> :	1
<i>Dd</i> :	4
<i>DD</i> (now <i>Do</i>):	2

As the above factors increased and computations became more complicated, so the classification of responses according to content developed gradually. At first Rorschach's only distinction in terms of content was between human beings (*H*) and animals (*A*). As other images were considered, new classifications arose, such as Anatomy, Object, Plant, etc. Still later, Rorschach distinguished interpretations of humans or animals as a whole from responses which referred to parts of humans (*Hd*) or of animals (*Ad*). Thus a

third column was developed, which classified responses according to content:

H
Hd
A
Ad
 Anat.
 Obj.
 Plant
 (etc.)

Still other factors were brought in, such as the chiaroscuro responses (*F* ) , which are determined by the shading of the colors, and the popular responses (*P*), which are produced in one-third of all cases. Both of these made their appearance only after the publication of *Psychodiagnostik*.

Are these all the factors which can be found? Yes, if we limit ourselves to those which Rorschach himself worked out and used. But there are others. Several factors isolated by Rorschach can be split into component parts, as Rorschach himself had originally done with the movement responses (*FM*, *MF*, *M*), or as was later done with the chiaroscuro responses. But this is of little consequence. The problem is not to find as many factors as possible, but to state the psychological conditions indicated by them. If we cannot cope with the difficulty of that requirement, or if there be no real and underlying basis of any factor, the further division of factors becomes mere trifling which, at best, leads to useless systematization. The new factors then become pseudo-factors and a burden to the test.

What was it that made Rorschach change his records and modify his factors? With respect to the distinction between good and poor form, it was, at first, impossible to make a differentiation. Rorschach needed some basis for comparing the form responses of intelligent persons with those of the less intelligent. He needed more material before he could see what both groups had in common and where they differed. Thus he used his cards systematically and reached a statistical basis for his differentiation. He saw, for instance, that both intelligent and

unintelligent persons interpreted card IV as "an animal skin," but only rarely did the intelligent interpret it as "a butterfly," a common interpretation by the less intelligent. On that basis he scored "an animal skin" as a plus and "a butterfly" as a minus.

Such are the criteria for the objective determination of whether an interpretation is a good or poor form response. Rorschach combined the statistical findings with constant comparisons, both between the findings of the test and clinical facts, and between definite groups of persons, such as the intelligent, the unintelligent, and the mentally retarded. The first comparison provided Rorschach with the correlation between test findings and clinical data, while the latter furnished a basis for the statistical data applicable to any one group. By using over four hundred test records, Rorschach obtained what he called the symptomatic values of the factors, that is, their psychological and psychopathological significance. Unfortunately there is no statement of the total number of responses of the four hundred tests in his *Psychodiagnostik*. In the same way, Rorschach found that intelligent persons give a fairly high percentage of good form responses, a good number of *Ws*, not too many animal responses, many good original answers, and at least several kinesthetically determined responses.

Whatever factors Rorschach could account for, he kept. Those which he could not trace to any psychological basis he eliminated. It was for that reason that he separated *Dd*, *S*, and *DD* (later *Do*) from the original *D*. On the other hand, conscientious and systematic comparisons led Rorschach to discontinue the reckoning of *Ms* and *Cs* in terms of percentages. He discovered the significance of the color responses and pointed out the role of color in our lives: parades are colorful; we use drab colors for mourning; depressed people see things as gray; we use color in signs, such as blue for faith, red for love, etc.; we even use color in many sayings, as in the remark "I feel blue." Rorschach invented the terms "affective sensitiveness" and "affective responsive-

ness," and tells in his *Psychodiagnostik* how the adjustment of the color to the form in the test picture corresponds to the emotional adjustments we constantly make in life. These adjustments are reflected on the FCs, whose absence in a test record surely indicates that the person is deficient in that aspect of his affectivity, which is most often the case in neuroses and schizophrenia. Rorschach also recognized that the kinesthetic responses were the opposite of the color responses. From that point, Rorschach developed the concept of experience type, the mode in which we experience things.

At the beginning, Rorschach used a larger number of cards than we have today; some of his early records are based on twelve cards. The selection of the ten now in use was the result of a long, wearisome process, which was a part of the empirical development of the test.¹ Rorschach kept those cards which proved to be the most useful with reference to the factors and indicators which he discovered. While he was putting the finishing touches on his test, he changed some pictures. In the case of Card V, for instance, he deleted two angel-like figures on either side of the "bat," for he wanted a picture which could easily be interpreted as a *W* in order to test the production of *W*s in normal persons. As it happens, two-thirds of the responses of normal Ss to Card V are *W*s. On the other hand, Rorschach kept Card X because it was the hardest to interpret as a whole, being of disconnected configuration. As it happens, while two-thirds of the responses of normal persons to Card V are *W*s, only 6 percent of their responses to Card X are *W*s. With respect to *Ms*, as well as to color responses, the variety is still greater (See Table 1).

Thus, each of the ten pictures complies with some particular condition. None is equivalent to any of the others, nor is a substitution valid unless it complies or nearly complies with the conditions pre-

sented by Rorschach's cards. In a sense, each card is a test in itself. Thus, it is impossible to compare findings obtained by means of different stimuli. Even if the sequence of the ten cards is altered, or if they are presented in reversed order, the results will be affected. All this may seem to be a matter of course, but these very errors have been committed in good faith. It has even happened that the results obtained from the first five cards were compared with those based on the last five in order to verify or impeach the validity of the test.

We must return to our consideration of Rorschach's own personality. He did some painting, illustrated his children's books, and drew a great deal. He could delineate a person's position and gesture with a few lines. A somewhat artistic person, and especially a very kinesthetic one, it fell to his lot to see what others, such as Hens, in his dissertation written under Bleuler's direction, had overlooked. Hens and Bleuler considered the use of pictures as a test of the imagination. They give a lot of interesting details and facts, but both of them lacked the leading idea and conception which led Rorschach to success.

The validity and value of the test become obvious when one reads Rorschach's *Psychodiagnostik* with attention. (The title of the book was a concession to the publisher; Rorschach himself had selected the more modest title, *Wahrnehmungsdiagnostisches Experiment*.) Nevertheless, soon after the book appeared, Rorschach's invention was considered as a purely local affair and of no interest beyond the author's personal reach. That judgment was made without any anticipation of what was to come.

Today the experiment is on its way to becoming the central psychological test. Perhaps that is more true abroad than here (a large portion of the third printing was sold in Czechoslovakia). In the United States, the test was first introduced by David M. Levy, after his visit to Zurich some decades ago. In 1937 there appeared a monograph by Levy's collaborator, Samuel J. Beck (1937). The book is worth

¹ Editor's note: Ellenberger (1954) ascribes the elimination of some cards to the publisher's insistence.

reading, although, as John Benjamin² has pointed out in a review, Beck overemphasizes one otherwise quite justifiable aspect of the test and neglects some which are of greater consequence.

Several explanations for the delayed recognition of the test can be offered. Rorschach left no more than a skeleton at the time of his death, which occurred at the time when he should have gone ahead to work out what he had begun. In his publication, he undertook no less a task than to tackle human psychology from the viewpoint of apperception, which means that the test approaches personality from a position opposite to that of psychoanalysis. Rorschach's publication was too concise and incomplete to provide a complete basis for the use of the test. The *Psychodiagnostik* omits too many things which are necessary. One can learn from it what whole responses are, for there is no doubt about those, but one cannot tell from it what constitutes a *Dd* or an *O*; yet these factors are indispensable in the interpretation of a record. Such matters must be determined statistically, but the knowledge of these statistical foundations were buried with the author. To be sure, his book contains examples and tables, which are consulted like a lexicon. But these data represent definite types and selected paradigms designed to point out certain fundamental facts; they do not deal with the variations which one constantly meets in life. That is why we still lack sufficient knowledge about the findings in normal cases. We do not know how far Rorschach's findings reach, or where they intersect the findings in pathological cases. Still another reason for the

slow adoption of the test is that it requires a great deal of experience and a good knowledge of much material, including the whole range of pathology, which is hard to acquire. People prefer to work on individuals or small clinical groups. Such an approach takes less time and promises much more, but it leaves open the question of whether the conclusions are really correct.

REFERENCES

- Beck, S. J. *Introduction to the Rorschach method: A manual of personality study*. Menasha, Wisconsin: George Banta, 1937.
- Benjamin, J. D. Discussion on "some recent Rorschach problems." *Rorschach Research Exchange*, 1937, 2, 46-48.
- Ellenberger, H. The life and work of Hermann Rorschach (1884-1922). *Bulletin of the Menninger Clinic*, 1954, 18, 173-219.
- Oberholzer, E. Zur differentialdiagnose psychischer folgezustände nach schädeltraumen mittels des Rorschachschen formdeutversuchs (Contributions of the Rorschach test to differential diagnoses of the psychological after-effects of skull fractures). *Zeitschrift für die gesamte Neurologie und Psychiatrie*, 1931, 136, 596-629.
- Oberholzer, E. Rorschach's experiment and the Alorese. Chapter 22 in *The People of Alor*, by DuBois, C. Minneapolis: University of Minnesota Press, 1944.
- Rorschach, H. *Psychodiagnostik: Methodik und ergebnisse eines wahrnehmungsdiagnostischen experiments (deutenlassen von zufallsformen)*. (Psychodiagnostic: Method and results of an experiment in apperceptual diagnosis by means of random forms). Bern: Bircher, 1921.
- Rorschach, H. & Oberholzer, E. Zur auswertung des formdeutversuchs für die psychoanalyse. *Zeitschrift für die gesamte Neurologie und Psychiatrie*, 1923, 82, 240-274. Also translated as "The application of the interpretation of form to psychoanalysis." *Journal of Nervous and Mental Diseases*, 1924, 60, 225-248, 359-379.

² Editor's note: Oberholzer did not specify this reference. In a critique of a paper by Beck, however, Benjamin (1937) takes exception to Beck's overemphasis on the objective-quantitative approach, the point to which Oberholzer is probably referring.

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Transference in Psychological Testing

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Summary: Transference as a theoretical construct within the conceptual framework of psychoanalysis is examined, pointing out the limitations this imposes on its use. After discussing why the term transference cannot be applied to psychological testing, the ways in which it has been misused are presented. The concept of externalization is introduced as an important means of understanding the structural dynamics of patients being tested, and its relevance to transference is stressed.

There is little doubt by now that psychoanalytic concepts play a major role in the interpretation of data from psychological testing. However, in the borrowing of concepts from one technique and applying them to another, difficulties had to arise. Thus in the clinician's zeal to integrate the formulations derived from psychoanalysis with the data of psychological tests, concepts were occasionally misused. This article will focus on one such misuse, that of transference in psychological testing.

Psychoanalytic Theory

The use of transference in psychological testing can be criticized on two levels. The first criticism revolves around the necessary requirements for designating a piece of behavior as transference. It will be shown in this section how Freud's definition of transference precludes its use in psychological testing.

Transference as a term in psychoanalytic theory is a construct. Rapaport (1944) has pointed out that there is no phenomenon of transference, only a group of mechanisms inferred from the data of analysis which is then given the name transference. One never sees transference. What one observes is a series of phenomena which may or may not meet the theoretical requirements for designation as transference.

What these theoretical requirements are constitutes a difficult question. In Freud's development of transference he used the term in many different articles, and at various conceptual levels. However, in Waelder's (1962) conceptual classification of psychoanalytic propositions we are given an outline for looking at Freud's use of transference. I will use this outline to

give examples at the varying levels at which Freud used transference. I will then point to the limitations this imposes on the use of transference and how it sets up transference as a theoretical construct.

Level I—the data of observation. Freud (1917) discussed how the patient in analysis suddenly develops a special interest in the doctor. At first the relationship between the patient and analyst becomes highly satisfying and the analysis makes great progress. However, this situation soon changes and the patient shows little interest in the work of analysis and nothing occurs to him.

Level II—clinical interpretation. At this level Freud (1917) talked of a transfer of feelings onto the analyst that isn't justified by the analytic situation. These feelings are derived from somewhere else, in readiness in the patient, and stimulated by the analytic treatment.

Level III—clinical generalization. Freud (1912) discussed the feelings the patient directs toward the analyst as of three kinds. The affectionate feelings, which are capable of becoming conscious, are based upon early relations to sexual objects where the aim has become deflected. The negative feelings are based upon the unconscious erotic elements of affectionate feelings and hostile feelings.

Level IV—clinical theory. Freud (1926) elaborated on transference as the repetition, in the love relationship with the analyst, of forgotten mental experiences and attitudes that the patient has already been through.

Level V—metapsychology. At this level Freud (1912) described transference as being caused by unconscious libidinal impulses, tied to objects, which in patients who had not had adequate gratification

leads to a readiness and expectation for certain behavior on the part of the analyst.

What are the conclusions that can be drawn from the above? First it is important to note that all the levels are dependent upon each other. As one goes up from "the data of observation," each proposition depends on the next lower level for its conceptual credence. Secondly and more relevant to this paper, is the fact that interpretations of transference cannot be made unless all the mechanisms postulated above are involved. Thus, transference interpretations must fit the model of: behavior not related to the present situation, which is a repeat of unconscious, libidinalized, past experiences and attitudes with objects. Attempts to use transference in other ways is a misuse of the theoretical meaning of the term and not transference. Finally, transference is a construct since one never actually views the past of patients, but only infers from the data that this was the way past object relations were experienced. It is the inferential data, both remembered and repeated by the patient, which leads to the interpretation of transference.

Using the model presented above, it does not seem that transference is a term that is applicable to psychological testing. The data from psychological testing provides insufficient evidence for transference interpretations. Although there is little doubt that in psychological evaluations one sees behavior on the part of patients that is not related to the present situation, that is not enough for a transference interpretation. As psychological examiners we simply do not have as concrete information the full range of object relations, both past and present, as experienced by the patient either consciously or unconsciously, to make an accurate interpretation of transference.

Psychological Testing

A second criticism of transference in psychological testing revolves around its use in the psychological literature. Although the literature is not exactly abun-

dant with articles in this area, it is not clear whether this is due to good sense or lack of interest. My subjective impression, however, is that transference is nearly universally accepted as a phenomenon in psychological testing. Therefore many believe there is little reason to say anything more about it. If this is the case two publications by Schafer (1954, 1956) could be considered important motivating factors. In attempting to bridge the gap between psychoanalysis and psychological testing, transference is one of the areas Schafer has focused on. He has alerted psychologists to the conditions within the testing situation from which transference will be stimulated—a questionable point among analysts (see Macalpine, 1950)—and he has also elaborated on how interpretations of the transference can help us in understanding our patients.

What does Schafer mean when he talks of transference in psychological testing? Unfortunately in his articles Schafer never discusses transference *per se*. He does, though, talk of "transference-colored behavior," "transference-colored reactions," "transference reactions," and "transference manifestation." What he means by these terms is unclear. At one point Schafer (1956) equated "transference reactions" with "misunderstanding of the present in terms of the past (p. 26)." This is an abbreviated version of Fenichel's (1945) definition of transference, leaving out the crucial notion of how the patient then strives to relive past experiences of childhood more satisfactorily.

Thus it becomes apparent that Schafer uses the aforementioned transference terms in a descriptive fashion (levels I and II of Waelder's model) with little theoretical meaning. When one says the patient misunderstands the present in terms of the past, it is first of all a description of behavior with only vague dynamic underpinnings covering a multitude of possibilities for what part of the past is causing the patient to misunderstand the present. Schafer is guilty of mixing up transference as a theoretical construct with behaviors which may or may not fulfill the conceptual requirements of the term transference. Schafer's use of transference here is no

more than a behavioral observation denoting one poorly defined aspect of the inter-personal relationship between tester and testee. Most importantly, it is poor theory to use transference in this way. Secondly, to talk of "transference-colored behavior" in testing as a behavioral observation is just added verbiage, since one must then proceed to describe the behavior itself.

In another section of the 1956 article Schafer defines the various transference terms referred to above in dynamic terms.

While by no means representing a full-blown transference neurosis, these rudimentary transference manifestations will inevitably express the patient's fundamental libidinal, hostile, defensive, moral and adaptive reaction patterns. Dynamic continuities of this sort have been solidly established by psychoanalysis (Schafer, 1956, p. 30).

Here Schafer discusses transference manifestations at a conceptual level (levels III and IV of Waelder's classification). That is, transference is not synonymous with behavior, but rather what is postulated are certain dynamic processes underlying the behavior. However, Schafer's use of transference can be criticized on various grounds. First of all there is no link between the observation of behavior and Schafer's conceptual framework for transference. One cannot trace the development of Schafer's clinical generalization and theory on transference from the data and its interpretation. Schafer makes the jump from behavior to "dynamic continuities" with no observable, meaningful steps. Secondly, Schafer's definition is so broad, covering the entire psychological makeup of the individual, that it becomes an unworkable concept. If one subsumes under the construct transference manifestation, the whole spectrum of an individual's "fundamental" psychological processes, then it follows logically that everything is a transference manifestation. This would be an unwarranted move toward over-generalization both in psychological testing and psychoanalytic theory. Finally, when a concept includes within its definition "libidinal, hostile, defensive, moral and adaptive reaction patterns," the

concept itself becomes diluted and thus meaningless.

Externalizations

There is no doubt, of course, that patients oftentimes behave in a way during psychological testing that has little to do with the "real relationship" with the examiner (i.e., the tester as a new object with certain inherited meanings depending on the type of referral). However, what is often misinterpreted as transference can be fruitfully looked at in terms of insights into the structural functions. It is to this area, and its relevance to transference, that I will now turn.

A. Freud (1965) has pointed out how the patient in analysis may use the analyst as an agent for internal conflicts and labels these as externalizations. Thus in the analytic situation the analyst may become a representative of one or the other parts of the patient's personality structure in the following ways: in tolerating freedom of thought the analyst may represent the patient's id; as far as he aids in the fight against anxiety the analyst may be viewed as an auxiliary ego; or due to the freedom of the analytic situation the analyst may be seen as an external super-ego.

Miss Freud's conceptualization certainly seems applicable to psychological testing, and can lead to important insight into the structural dynamics of patients. For example, a 14-year-old girl started off the testing session by verbally seducing the examiner with a lurid description of her sexual exploits. Then on Card 7 GF on the TAT she began in the following way, "This is a businessman and this is his secretary. He's sort of a, well, okay I'll say it, a Don Juan. And he is getting fresh with her. That's what you wanted me to say, isn't it?". One can see then that under the pressure of sexual stimuli, the patient sees the examiner as a representative of her own libidinal impulses. Thus the situation is turned around so it is not the patient who has sexual thoughts but rather the examiner.

The importance of the example cited above lies in its implications for understanding internal conflicts between sys-

tems within the patient. Of course externalization rarely occurs in isolation, but usually as an interaction among the structural components of the personality. Thus in the example above the patient was also a puritanical, Pollyannish girl with a harsh superego, who could not allow the presence of her own sexual thoughts and feelings. It is this type of insight into the dynamics of a structural interplay that defines the usefulness of the concept externalization.

The question must be raised, though, as to whether in the example cited above the behavior doesn't also represent transference. First of all, since the behavior did not seem to be stimulated by the immediate relationship, but rather upon some preconceived notion the patient had of how the examiner expected or wanted her to act, then wouldn't this be an example of transference? Furthermore, one can argue that since something like superego formation is at least in part a function of past object relations, then wouldn't the tester being seen as an external superego be one manifestation of the transference? Although true in a general way, interpretations of such externalizations as transference would be to miss the specific dynamics. What is crucial here is the specificity of the interpretation. Externalizations may or may not be a piece of transference. The examiner has no way of knowing this from the psychological data. However, what one is witnessing is behavior that clearly shows a structural interplay and this is the inference that can be comfortably drawn. "Understood in this manner externalization is a subspecies of transference. Treated as such in interpretation and

kept separate from transference proper, it is a valuable source of insight into the psychic structure (A. Freud, 1965, p. 43)."

REFERENCES

- Fenichel, O. *The psychoanalytic theory of neurosis*. New York: W. W. Norton, 1945.
- Freud, A. *Normality and pathology in childhood*. New York: International Universities Press, 1965.
- Freud, S. The dynamics of transference (1912). In P. Rieff (Ed.), *The collected papers of Sigmund Freud*. New York: Collier Books, 1963.
- Freud, S. Introductory lectures on psychoanalysis (1917). In J. Strachey (Ed.), *The standard edition of the complete psychological works of Sigmund Freud*. Vol. XVI. London: Hogarth Press, 1963.
- Freud, S. The question of lay analysis (1926). In J. Strachey (Ed.), *The standard edition of the complete psychological works of Sigmund Freud*. Vol. XX. London: Hogarth Press, 1959.
- Macalpine, I. The development of the transference. *Psychoanalytic Quarterly*, 1950, 19, 501-539.
- Rapaport, D. The scientific methodology of psychoanalysis (1944). In M. M. Gill (Ed.), *The collected papers of David Rapaport*. New York: Basic Books, 1967, pp. 165-220.
- Schafer, R. *Psychoanalytic interpretation in Rorschach testing*. New York: Grune and Stratton, 1954.
- Schafer, R. Transference in the patient's reaction to the tester. *Journal of Projective Techniques*, 1956, 20, 26-32.
- Waelder, R. Psychoanalysis, scientific method, and philosophy. *Journal of American Psychoanalytic Association*, 1962, 10, 617-637.
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Psychological Testing and Reporting

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Summary: An effort to shorten the time spent in psychological testing and reporting is represented by a four-page form which offers opportunity for systematic evaluation of the test battery. Opportunity is provided for reference to relevant test evidence.

While such a form in no way lessens the necessity for full understanding of test results, it helps systematize presentation of test findings as well as serving as a guide to interpretation of the test battery.

The time-consuming aspect of psychological testing has continued to be a problem for which there has been no satisfactory solution. In a setting in which psychodynamic personality evaluations are conducted on patients undergoing intensive psychotherapy, little compromise or modification in the number of necessary tests has seemed feasible. The evolved battery has included the Wechsler Adult Intelligence Scale (WAIS), the Rorschach Test, the Thematic Apperception Test (TAT), the Forer Sentence Completion Test (FSCT), and often the Bender-Gestalt and the Draw-a-Person (DAP) tests (See Table 1).

As indicated elsewhere (Carr, 1958), the need for a battery of tests arises not from the possible invalidity of any single test, but rather because different tests tap different levels of functioning and because the relationships between tests reflect the individual's multilevel system of functioning. Chosen because it suits this purpose, the test battery has seemed to offer only limited opportunity for short-cuts or abbreviation. For example, if one were

interested in intellectual functioning only insofar as it is represented by the IQ, it would be simple to choose two or three WAIS subtests which yield a prorated IQ correlating quite well with the full scale IQ. When one's interest extends beyond the IQ as a number, however, to an analysis of the individual's relative intellectual strengths and weaknesses and to an evaluation of how well the individual functions in various structured situations, few of the subtests can be eliminated without consequent loss of relevant data.

As a consequence of finding no breakthrough regarding the complexity and length of the test battery, consideration has been directed recently to attempts to shorten the time spent in test analysis and report writing. It has seemed that this could most easily be accomplished by presentation of a form or outline which offered the opportunity for recording inferences as objectively and succinctly as possible.

Such a form has the obvious advantage of providing the clinician with a simple means of reporting his inferences directly.

Table 1
Psychological Evaluation

Name:	Tests Administered: (Date: _____)
Age:	_____ Wechsler Intelligence Scale
Birthdate:	_____ Rorschach Test
Sex:	_____ Thematic Apperception Test
Test Behavior:	_____ Forer Sentence Completion Test
(Behavioral reactions during testing):	_____ Bender-Gestalt Test
Validity of results qualified because of:	_____ Draw-a-Person Test
_____ Rapport	_____ Other: _____
_____ Language difficulties	
_____ Physical Difficulties	
Other: _____	

Table continued next page

Table 1 continued

Test Data: (Optional)

WAIS (Scaled Scores):

Information _____
 Comprehension _____
 Arithmetic _____
 Similarities _____
 Digit Span _____
 Vocabulary _____

Digit Symbol _____
 Picture Completion _____
 Picture Arrangement _____
 Block Design _____
 Object Assembly _____

Rorschach Test:

R _____
 M/sum C _____
 P _____
 F+% _____ Extended F+% _____
 W _____ D _____ Dd _____

Unusual content:

TAT:

Revealing themes or affects:

SCT:

Unusual or particularly revealing completions:

Graphomotor techniques:

_____ adequately executed
 _____ poorly executed

Organic signs:

_____ absent
 _____ minimal
 _____ prominent

Intellectual functioning:

IQ: _____ Full Scale
 _____ Verbal
 _____ Performance

Present level of functioning:

Range of present variability: _____ to _____

Relative intellectual strengths:

Relative intellectual weaknesses:

Inferred potential:

Personality functioning:

Reality-testing ability:

In structured situations:

In unstructured situations:

Impulse control:

Manifest depression and guilt:

_____ poor _____ variable _____ adequate
 _____ poor _____ variable _____ adequate
 _____ lacking _____ tenuous _____ adequate
 _____ marked _____ moderate _____ absent

Manifestations of dysfunction:

_____ General variability in functioning:

(Evidence or examples):

_____ Difficulties in thought processes:

(Evidence or examples):

_____ Affective disturbance: (Evidence or examples):

_____ Interpersonal difficulties: (Evidence or examples):

_____ Ego boundaries, identity diffusion, psychosexual confusion, etc.
(Evidence or examples):

List and give evidence of major defenses: _____

Probable overt symptoms:

Interpersonal conflicts:

Inferred affect:	Manifest ----->	Covert
	SCT	Rorschach
Mother		
Father		
Females		
Males		
People		
Authority figures		

Self-concept:

Conscious wishes:

Underlying motivations:

Affects:	Manifest ----->	Covert
	SCT	Rorschach
Aggression:		
Anxiety:		
Depression:		
Guilt:		
Dependency		

Inferred diagnosis:

Degree of present disturbance: _____ mild _____ moderate _____ severe

Prognosis for social recovery: _____ poor _____ fair _____ good

Basis for inference:

Motivation for personality change: _____ poor _____ fair _____ good

Primary assets:

Primary weaknesses:

Recommendations:

Summary:

It presents an outline which can be followed routinely. It gives license to the use of standard expressions and references, rather than confronting the writer with the task of formulating differently each individual report.

Experience has also shown, however, that such a form in no way de-emphasizes the necessity for full understanding of the test results. Utilization of such a form or outline requires, if anything, even more complete analysis and better understanding of test results than does the typical narrative report which permits the writer to choose and limit the areas he wishes to discuss. Also, it has become obvious that the complicated and individualized circumlocution in narrative reports is often dictated by the simple fact that the writer must obscure the specificity of his inference. Dynamics, degree of incapacitation, major defenses, prognosis, and so forth, can usually be formulated rather simply when they are fully understood or when there is a strong conviction about them. Less than perfect understanding of these issues is quite common,—the psychologist need make no apology for having to be indefinite about many of these complicated issues. Report writing becomes most difficult, however, when the writer is trying to imply that he is being more definitive than he feels, when the desire to communicate explicitly is compounded by the need to play safe, to hedge, to qualify. It is at these times that the writer must spend considerable time choosing appropriate "modifiers", where delicateness in expression becomes exceedingly time-consuming.

Hence, no outline can compensate for limitations in understanding the test data. It may, in fact, only highlight those areas of which clinicians are ignorant. With this realization in mind, it has seemed that some guide should be provided for directing attention to those portions of the test data where answers to specific questions might be found. Where the potentially relevant test data is found to be unclear or non-specific in meaning, it has been demonstrated that it is often wise simply to quote the test evidence, since meaning will frequently arise in the course

of psychotherapy or in the context of the full clinical history. The value of test evidence is illustrated in the example of an otherwise guarded Rorschach protocol which included the responses "head of some wild animal" (card IV) and "wild plants" (card X). The therapist found these directly quoted responses more helpful in understanding the suicidal Negro patient than any blind interpretation the psychologist could have made: the patient's life had stressed the conventional acceptance of his position in life and the patient spoke of how he hated the "wild life". Experience has shown the value of quoting test evidence, not only as meaningful support for inferences, but also insofar as ultimately making possible a fuller understanding of their meaning.

As indicated (See Table 1) one developed form comprises a four-page booklet in which specific areas of functioning are delineated. Each area is discussed in turn.

Test Behavior (Page 513)

It is believed that this section is best confined to strict behavioral data—deep level inferences or high level abstractions are to be avoided (e.g., "autistic", "delusional", "manic"). It is better to report that "the patient hung her head and cried" than to say "depression was evidenced." Narrative reports often include much extraneous material in this section. In most settings there is no need to report, "The patient has blue eyes" or even that she "has pretty, blue eyes." Basically, the major purpose of this section is to convey whether the test results can be assumed to be valid and if not, what reservations should be placed on them.

Test Data

Although considered an optional section, the form provides opportunity for reporting certain test scores and features, isolated from any interpretation. Such data is found to be helpful when one is attempting to evaluate the accuracy of a report, particularly when it comes from another setting. At such times, it is helpful to have sufficient data available for judging the validity of the major conclusions. A report may be coherent and logical,

while giving no clue as to whether it is at all valid. With the exception of a judgment pertaining to the presence of organic signs, the evidence reported under test data should be confined to test scores or data, without highly inferential interpretation or evaluation.

Intellectual Functioning (Page 514)

Presentation of the findings regarding intellectual functioning is usually easily accomplished, and most directly represented by WAIS interpretations. Level of functioning and range of variability should be based on Wechsler's (1958) terminology (e.g. "bright normal" covers the 110-119 range). For elucidating relative intellectual strengths and weaknesses, the discussion of WAIS subtests offered by Mayman, Schafer, & Rappaport (1951) is most helpful and relevant.

Personality Functioning

Reality testing ability. Judgment about reality testing ability can generally be made most directly from the WAIS and the Rorschach tests, although other tests may also contribute to the judgment. It is well to keep in mind that social situations, like test situations, vary in the degree to which cues for appropriate social action are specified (Forer, 1950a). An underlying assumption is that the patient who shows a disturbance in a test situation of given unstructuredness or ambiguity would show equivalent disability in a social situation of comparable ambiguity. In structured situations (test or social), some individuals can function so well as to earn for themselves the dubious distinction of being called "well adjusted." It is only when placed in situations where cues for appropriate action are not given that their basic disturbance becomes apparent. Hence, the distinction between reality testing in structured and unstructured situations is called for. Regarding structured situations, the *comprehension* and *picture completion* WAIS subtests are probably most relevant. Regarding unstructured situations, the *Rorschach form level* and *number of popular responses* must be considered specifically, along with the general adequacy of the Rorschach

protocol. In evaluating the Rorschach test from this standpoint, it is well to keep in mind that even the Rorschach blots differ in their unstructuredness or ambiguity, just as do all the projective tests in the battery.

Impulse control. Judgments about impulse control obviously cannot be made independently of those pertaining to reality testing ability. Other factors to be evaluated would include availability of recourse to fantasy gratification, as well as the presence of anxiety, depression, or guilt which might serve to inhibit impulse expression. Utilization of the Rorschach test is directly relevant, particularly as reflected in the *FC/CF*, *C*, and *Fc/cF*, *c* relationships. The SCT includes statements eliciting causes of aggression, rejection, failure, responsibility, sex, and love (Forer, 1950b). In evaluating SCT data, it is well to keep in mind that these data are more subject to the conscious control of the patient in terms of the image he is choosing to present. Hence, even the rapport with the examiner and motivation at the time of testing may be variables relevant to an analysis of the relationships between tests.

Manifest depression and guilt. Manifest depression and guilt are often most directly revealed through TAT themes and SCT completions. As a measure of psychomotor speed, the *digit symbol* subtest of the WAIS is particularly vulnerable to the effects of depression, as may be all the timed performance tests. One must be alert to the presence of compensatory mechanisms which obscure an underlying depression, probably best inferred from the Rorschach test. A discrepantly high *digit symbol* subtest score is sometimes found to reflect such reactive strategies.

Manifestations of major dysfunction. Judgments regarding manifestations of major dysfunction include such issues as general variability in function, difficulties in thought processes, affective disturbance, and ego boundaries, etc. Recourse to the full test battery must usually be taken in order to make such judgments. Illustration of this process in the diagnosis of schizophrenia is elaborated elsewhere (Carr, 1964).

Major Defenses

No proper evaluation of major defenses should be undertaken without thorough knowledge of Schafer's *Psychoanalytic Interpretation in Rorschach Testing* (1954). Some defenses are often highlighted dramatically on tests other than the Rorschach; for example, a discrepantly high information subtest score on the WAIS reflecting attempts at *intellectualization*, the avoidance of depressive themes on the TAT in spite of the stimulus value of the cards as a manifestation of *denial*, and the negation of cause for anger on the SCT as a reflection of *reaction formation*. Normative TAT data presented by Eron (1950) provides a basis for evaluating deviations from the usually assumed stimulus value of each card which reflect defensive operations.

Overt Symptoms (Page 515)

Overt symptomatology may be detected from the patient's direct report on the SCT ("I wish I were dead"), or it may be a highly inferential judgment. It should be recognized that the prediction of overt behavior through the use of projective techniques solely may be very difficult to do with certain disorders. Some helpful principles are presented in "The Prediction of Overt Behavior through the Use of Projective Techniques (Carr, Forer, Henry, Hooker, Hutt, & Piotrowski, 1960).

Interpersonal Conflicts

Examination of the total test results usually allows the clinician to make a statement about the patient's relationship with each of the interpersonal figures or representatives indicated. Ideally it will be a "dynamic" statement in the sense of its relating consciously expressed attitudes to feelings less available to the patient's awareness or to assumed early genetic determinants. The basis for such a statement typically involves data from more than one test. As indicated in Table 2, the Forer Sentence Completion test includes sentence stems which specifically elicit important attitudes to each of the important interpersonal figures, such as

the mother, etc. (Forer, 1950b). The TAT includes particular cards which also presumably tap similar attitudes to these figures, such as the "mother-son" or the "mother-daughter" cards. The Rorschach test elicits responses which, either because of their content significance (such as "oral" content) or because of the assumed stimulus value of what elicited the response, are also relevant to such interpersonal figures as the mother. Research has shown that responses to such stimuli can be scored reliably in terms of such affective content areas as "dependency," "hostility," "anxiety," and "positive feelings," (Carr, 1954). In general, the level of inference from SCT to TAT to the Rorschach test varies directly with the assumed level of awareness that is presumably being tapped. Attention should be directed to all such relevant test data before the final inference is formulated about the mother or any other interpersonal figure. If meaningful inferences cannot invariably be formulated about each of these figures, it is often most helpful to quote the evidence which might potentially be meaningful in light of the full clinical history.

Self-concept

Evaluation of the self-concept involves reference to the full test battery. Figure-drawings may be especially revealing. On the SCT, dominant drives (wishes) should be inspected. Interpretation of Rorschach content and TAT themes may be most helpful for inferring unconscious motivations. Various hypotheses pertaining to Rorschach test interpretation offered by Phillips & Smith (1953) should be considered and evaluated.

Affects

As indicated previously, the FSCT was especially designed to elicit both "causes of" and "reactions to" the major affects. The ideal formulation, however, must take recourse to other evidence as well, particularly TAT and Rorschach data which presumably tap deeper levels of awareness. The previously indicated defenses often become highlighted through direct reference to test responses or data even without interpretation or high level inference.

Table 2
Test Stimuli Pertaining to Various Interpersonal Figures (for Males)^a

Figure	Forer SCT	TAT	Rorschach
Mother	20. His earliest memory of his mother was 35. When he thought of his mother, he 60. My mother always 76. When my mother came home, I 94. When he was with his mother, he felt 99. Mothers	Picture 6 BM (Elderly woman and young man)	Card VII "Mother" card
Father	9. My father always 16. Most fathers 33. My earliest memory of my father 70. When my father came home, I 88. Whenever he was with his father, he felt 96. I wish that my father	Picture 7 BM (Elderly man and younger man)	Card IV "Father" card
Females	21. The ideal woman 26. A relationship with a sister 39. Most women 67. My first reaction to her was 71. Her reaction to me 81. Most women act as though	Picture 4 (Woman clutching man's shoulders)	Female percepts seen (Cards I-X)
Males	10. The ideal man 13. My first reaction to him was 30. Most men 50. A relationship with a brother 59. His reaction to me 95. Most men act as though	Picture 9 BM (Men lying on grass)	Male percepts seen (Cards I-X)
People	15. His new neighbors were 38. When someone looks at me, I 49. People seem to think that I	Picture 2 (Farm scene)	Human percepts Animal percepts (Cards I-X)

Table 2, Continued

	66. In a group of people, I generally feel		
	84. Most people are		
	93. Whenever he is introduced to people, he		
Authority	23. When I met my boss, I	Picture 1	Card IV
	36. Taking orders	(Boy and violin)	
	73. People in authority are		
	77. When they told him what to do, he		
	91. Sometimes I feel that my boss		

^aFemale form of SCT and alternate TAT cards selected for female patients.

Inferred Diagnosis (Page 515)

It should be reiterated at this point that tests merely record behavior (Korner, 1956). Clinical insights are arrived at on the basis of inference. The inferential process regarding clinical diagnosis leaves much to be desired. One relevant caution is that the suggested diagnosis should be consistent with the reported findings. To maintain such consistency a knowledge of psychodynamic theory is essential. For example, if repression is the only defense listed, a diagnosis of paranoid schizophrenia is hardly appropriate. If adequate understanding of the patient is achieved, the diagnostic label will generally follow logically. Hence, diagnosis should be more than simply a labelling of the patient, since wisely used, it reflects his total hierarchical functioning.

Degree of Overt Present Disturbance

Regardless of diagnosis offered, it is often helpful to indicate the present degree of overt disturbance, including the patient's ability to handle practical details of everyday life and judgment regarding his degree of incapacitation. In making this inference, judgment should be based on present condition, without reference to potential or likelihood of change.

Prognosis for Social Recovery

Particularly when the degree of present incapacitation is marked, it is helpful to evaluate the prognosis for social recovery.

In this regard, it is relevant to indicate the correlation between good social recovery and the presence of strong affective features, regardless of type of treatment or even in the absence of any treatment. Obviously, the use of color and shading on the Rorschach test as well as evaluation of all assets should be indicated.

Motivation for Personality Change

Related to the issue of motivation for personality change is judgment of what, if anything, the patient might want changed about himself. Many patients really desire the change to occur in others or in reality. Some seek mere symptom removal. The judgment should be made in relation to all the available evidence.

Primary Assets Primary Weaknesses

These sections should include a report of the strengths and weaknesses as reflected in intellectual functioning and personality functioning.

Recommendations

This section is used to elicit whatever recommendations stem from the previously reported inferences. It may involve suggestions ranging from occupational or vocational guidance, suicidal cautions, recommended type of treatment. Whatever the recommendation, it should appear logical in terms of the previously reported data.

Summary

This section should include a succinct summary of the patient's personality functioning. However fragmented the previous conclusions may have been, this section should be integrated into a coherent summary.

REFERENCES

- Carr, A. C. Intra-individual consistency in response to tests of varying degrees of ambiguity. *Journal of Consulting Psychology*, 1954, 18, 251-258.
- Carr, A. C. The relation of certain Rorschach variables to expression of affect in the TAT and SCT. *Journal of Projective Techniques*, 1956, 20, 137-142.
- Carr, A. C. The psychodiagnostic test battery: rationale and methodology. In D. Bower, & L. E. Abt (Eds.) *Progress in clinical psychology*. Vol. 3. New York: Grune & Stratton, 1958. pp. 28-39.
- Carr, A. C. Psychological defect and psychological testing. In L. C. Kolb, F. J. Kallmann, & P. Polatin (Eds.) *International psychiatry clinics*. Vol. 1. Boston: Little, Brown & Company, 1964. pp. 773-798.
- Carr, A. C., Forer, B. R., Henry, W. E., Hooker, E., Hutt, M. L., & Piotrowski, Z. A. *The prediction of overt behavior through the use of projective techniques*. Springfield, Ill.: Charles C. Thomas, 1960.
- Eron, L. A normative study of the Thematic Apperception test. *Psychological Monographs*, 1950, 64, 1-48.
- Forer, B. R. The latency of latent schizophrenia. *Journal of Projective Techniques*. 1950, 14, 297-302. (a)
- Forer, B. R. A structured sentence completion test. *Journal of Projective Techniques*. 1950, 14, 15-30. (b)
- Korner, A. F. Limitations of projective techniques: Apparent and real. *Journal of Projective Techniques*. 1956, 20, 351-355.
- Mayman, M., Schafer, R., & Rapaport, D. Interpretation of the Wechsler-Bellevue Intelligence Scale in personality appraisal. In H. H. Anderson, & G. L. Anderson (Eds.) *An introduction to projective techniques*. New York: Prentice-Hall, 1951. pp. 541-580.
- Phillips, L., & Smith, J. G. *Rorschach interpretation: advanced technique*. New York: Grune & Stratton, 1953.
- Shafer, R. *Psychoanalytic interpretation in Rorschach testing*. New York: Grune & Stratton, 1954.
- Wechsler, D. *The measurement and appraisal of adult intelligence*. (4th ed.) Baltimore: Williams & Wilkins, 1958.

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The Paired Hands Test: A Technique for Measuring Friendliness¹

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Summary: An adaptation of Wagner's Hand Test, using two hands per photograph, has provided a quickly administered, objectively scorable, projective technique for measuring spontaneous feelings toward other people along the friendliness-hostility dimension. Data supporting the reliability and validity of this technique as a sensitive instrument for its intended purpose are presented.

Compared with the many psychological tests available for measuring clinically significant characteristics associated with maladjustments, there are relatively few for measuring positive qualities in people not presumed to be disturbed. This article describes a tool designed to measure friendliness. It was constructed originally for evaluating possible changes in friendliness among children presumed to be fairly friendly at the beginning of the study. The question to be answered was whether or not such children would become even friendlier as a result of a very special type of group living experience. To investigate change in such children, a measure of friendliness was needed which would be sufficiently sensitive to tap deep-seated attitudes and make relatively fine discriminations. Brevity of administration and objective scorability were other considerations which had to be met.

The *Hand Test*, by Edwin Wagner, contained the essence of what was needed for our special purposes, but it had to be modified to provide sharper discrimination on the one dimension, friendliness, in which we were primarily interested (Bricklin, Piotrowski, and Wagner, 1962; Wagner, 1962). The major modifications were to use two hands in varying relationships, as opposed to the single hand cards used by Wagner; and color photographs, rather than sketches, to convey more realism. Irving R. Stone suggested several

years ago that something of this sort be tried (Stone, 1962).

The results of our initial research with this technique are summarized in the present article, although experimentation with changes in the original test is currently being carried out. Our conclusions are tentative, but we nonetheless believe that the original studies summarized here are sufficiently significant to warrant recording. Though they raise many questions which cannot be answered conclusively at this time, they still provide convincing evidence that the idea suggested by Stone may be a fruitful technique for measuring friendliness.

Definition of Friendliness

It was assumed for this research that friendliness in individuals can be judged through their projections. If when confronted with the representation of two interacting people, as indicated by a photograph of two different hands, an *S* made the spontaneous judgment that they seem to be interacting in a friendly way, or one might say, be experiencing positive feelings toward one another, the *S* was considered to have projected friendliness. The degree of friendliness in an individual was then defined by the frequency with which he made such judgments. The more times he made such judgments on the Paired Hands Test, the higher was his score, and the more friendly he was considered to be. The friendliness end of the continuum was of primary interest in the present research.

Description of Test

The Paired Hands Test, as used in this study, consisted of a deck of fifteen 3" x 4" color photographs of hands mounted on stiff cardboard. In nine of these there were two hands in varying positions and

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² The authors wish to express their appreciation to Dean L. Meinke, Mary Jane Walsh, and Carol Walker for help with the statistical analysis and to Venus Bluestein for help in testing at the CISVillage.

relationships to one another, one always darker than the other (accomplished by having a Negro and a Caucasian pose for the photographs), to show graphically that the two hands belonged to quite different people. We do not believe that friendliness as a personality dimension can be divorced from ethnic attitudes, and we assumed that a truer measure of this dimension could be achieved if Ss are required to respond to stimuli involving widely different people.

The other six photographs were of single hands, three dark and three light. For each photo of a dark hand there was a comparable photo of a light hand. These three matched pairs of single hand photos were scattered among the other nine in random fashion. They were included in order to compare the stimulus value of paired hands to that of a single hand. Presumably, paired hands, showing interaction between two persons, would be more likely to elicit a response related to friendliness.

The people who posed for these photographs were in their late teens and of both sexes. Most viewers have thought the photographs to be of adult hands, but they seldom have posed the question of sex. When this question was investigated in a separate study by asking Ss after they had completed the test to identify the sex of the hands, most Ss were unaware of sex differences and had not even thought of it during the testing. About half the group thought, in retrospect, that the hands were all male, several guessed that they were female, some surmised that both sexes had been used, while the rest simply said that they did not know.

The Ss were shown the photographs one by one and asked to say in each case what the hands might be doing, and, to keep the testing time short, just to give their first impression. Responses were recorded verbatim.

They were scored *plus* if they represented an action which suggested a feeling of friendliness toward another person, such as giving something to somebody, shaking hands, playing together, or helping someone; *minus* if they represented an action which suggested a feeling of hostility

toward another person, such as hitting, slapping, pushing, or grabbing; or *zero* when it was unclear whether the action might be friendly or unfriendly, or when it was aimed at an object rather than a person. The algebraic sum of these pluses and minuses then became an S's total score on the test, so that theoretically it was possible for scores to range from -15 to +15. These scores are viewed as representing a continuum of feelings toward other people, ranging from hostility at the lower end through varying degrees of friendliness at the upper end.

Subjects Tested

The test was originally designed to study 11-year-old children attending a Children's International Summer Village. One of the major purposes of these Villages is to provide opportunities for developing friendships across national boundaries. The children come from all parts of the world in delegations of four, two boys and two girls, and they are carefully selected by the country or chapter sending them. The data reported here were collected at the Village held near Cincinnati, Ohio, during the summer of 1966. The children came from the following twelve countries: West Germany, Japan, Norway, Sweden, Belgium, Guatemala, Netherlands, France, Mexico, Philippines, U.S.A., and Canada. Because of the limited testing time available, an attempt was made to test only one boy and one girl from each delegation. This was not always possible and the sample actually tested consisted of 23 children, 13 girls and 10 boys. These children were given the Paired Hands Test during the first few days of the Village and then again during the last few days. The two testing sessions were three and a half weeks apart. A description of the type of program the children were experiencing during this intervening month may be found in the CISV Handbook (Allen and Mathews, 1961).

A comparison group of eight children, four boys and four girls, living in the Cincinnati area, who had been finalists in the competition for CISV delegates, were also tested. These runners-up in the competition can be considered comparable in many respects to the children actually

attending the Village, since it is always very difficult to make the final selections. They were all American, so could not be treated as a perfect control group, but they did offer an opportunity for making a comparison between some children who had the CISV experience and others, comparable in many respects, who did not. These finalists were tested on a test-retest basis with the same interval of time in between, and during the same summer period, as the CISV children.

Another group tested consisted of 11-year-old children selected randomly from the fifth- and sixth-grade classes of an American public school. Seventy-five percent of the children attending this school come from low socioeconomic backgrounds; the backgrounds of the remaining twenty-five percent are primarily professional or managerial. This school is therefore not representative of most American public schools, nor is the socioeconomic level of the majority of its students comparable to the CISV group, who came on the average from higher socioeconomic backgrounds. It was used solely because it offered a good opportunity for testing a group of unselected 11-year-olds who would not be expected to be as friendly as the carefully selected CISV children and American finalists, and for whom we therefore hypothesized a lower mean score.

Twenty-six of these children (15 boys and 11 girls) were tested on a test-retest basis with a three-and-a-half-week interval between testings so that these data could serve as another comparison to the CISV findings. Seventeen other 11-year-olds from this school (9 boys and 8 girls) were tested just once, solely for the purpose of increasing the *N* for our norms.

Reliability

A scoring guide was developed, consisting of examples of plus, minus and zero responses. Using it, two persons independently scored the protocols from the first testing of the 23 CISV children and 8 finalists. An inter-scorer reliability coefficient of .98 was thus obtained, based on an *N* of 31. Agreement was so close that only one scorer has been used subsequently.

Opportunity for calculating test-retest reliability was provided by the test-retest design. On the basis of the data for the same 31 children referred to above (CISV and finalist groups combined), this reliability was found to be .75. For the 26 American public school children who were tested twice, test-retest reliability was found to be .66.

Validity

From the test-retest reliability coefficient derived from the CISV-related samples, one would anticipate that no statistically significant changes would be found in these children with respect to friendliness, as measured by the Paired Hands Test, during the course of the month. This did turn out to be the case. However, a possible trend for girls' scores to increase slightly and boys' scores to decrease slightly was suggested by the data, but whether or not this represents anything more than a chance occurrence is being investigated in a more recent study not yet completed (see Table 4). The original findings nonetheless did contain indications to support the validity of this instrument as a sensitive measure of friendliness as defined.

Sociometric ratings taken at the time of the second testing at the Village provided an opportunity for relating Paired Hands Test scores to popularity ratings. From the question "Who are your special friends at the Village?" a tally was made of how many times each child was named. This made it possible to divide the group into approximately equal halves, upper and lower, with respect to popularity. (Since some of the children had the same number of tallies, the division could not be exactly equal.) It was found that the mean score of the high popularity group on the Paired Hands Test was considerably higher than the mean score of the low popularity group, as shown in Table 1.

A significance of this difference at the .05 level was determined by using a $2 \times 2 \times 2$ (sex \times popularity \times test-retest) analysis of variance with repeated measures on the third factor, test-retest. The test-retest factor refers to the scores obtained on each child first at the beginning and then

Table 1
Mean Scores of High Popularity and Low Popularity CISV
Groups on Paired Hands Test Over Both Testings

	N	First Testing	Second Testing
High Popularity	13	7.15	7.46
Low Popularity	10	4.00	3.50

at the end of his stay at the CISVillage. Equal cells were obtained for this analysis by the method of random elimination of Ss (see Table 5).

Since the children at the Village who were more popular at the end of the month scored significantly higher on the Paired Hands Test than the less popular group, both at first testing and upon re-testing, the inference appears warranted that neither group changed significantly over the period studied, and the more popular children were from the beginning a friendlier group of children. This was to be expected, thus providing support for the validity of the instrument as a measure of friendliness as defined in this article.

The hypothesis that CISV children as a group would score significantly higher on the test than the American public school children was also supported, as may be seen in Table 2. Although there was considerable variation among the

CISV children with respect to Paired Hands Test scores, as shown in Table 1, the fact remains that they all were considered to be outstanding and friendly 11-year-olds by those who selected them. Thus, the finding that as a group they scored significantly higher on this test than unselected American public school children also supports the validity of the instrument as a measure of friendliness in the sense defined in this article.

Another comparison made was between the CISV children who attended the Village and the CISV finalist group. This is summarized in Table 3.

A 2 x 2 x 2 (sex x subject group: CISV versus finalists x test-retest) ANOVA with repeated measures on the third factor, test-retest, revealed no significant difference on the factor under consideration here, i.e., finalists versus CISVers (see Table 6).

Since the finalists were originally tested because they were considered compar-

Table 2
Mean Scores of CISV Group and Public School Sample on
Paired Hands Test (First testing only)

CISV Group	Public School Sample	df	t
(N = 23)	(N = 43)		
5.78	4.30	64	2.39*

* $p < .01$ (one-tailed test)

Table 3
Mean Scores of CISV Group and Finalists on
Paired Hands Test

	N	First Testing	Second Testing
CISV Group	23	5.78	5.74
Finalists	8	7.25	7.50

able to the children actually attending the Village, the fact that no significant difference was found between scores of these two groups on the Paired Hands Test further supports the validity of this instrument as a measure of friendliness. It is interesting to note in passing, however, that the finalists tended to score higher than the CISV group as a whole, or more like the high popularity group of CISV children. One might wonder if this trend would have been found to be significant had the samples been larger. An attempt at replication now in progress may answer this question.

Some interesting sex differences have been found in our data, which have also lent some support to the validity of the instrument. Among the 23 CISV children and 8 finalists, mean scores for the girls were higher than for the boys on both the first and second testings. This held true

for the high popularity CISVs as well as the low popularity CISVs, when this breakdown was made. These data are summarized in Table 4. The sex factor was found to be significant at the .05 level in both the CISV and finalist groups (see Tables 5 and 6). These findings have been offered as a support for validity because they are in line with the generally held assumptions that girls are less aggressive than boys. It was therefore surprising to the authors to find that in the American public school sample the difference between girls and boys, though in the expected direction, was not significant. Using pre-test scores only for the 26 children who were tested twice and combining them with the scores of the 17 children from this school who were tested only once, it was found that the mean score for girls based upon a sample of 19 girls was 4.68, while the mean score for

Table 4
Sex Differences in Mean Scores on
Paired Hands Test

Group	Girls		Boys	
	N	Mean	N	Mean
Finalists (First Testing)	4	8.25	4	6.25
Finalists (Second Testing)	4	9.00	4	6.00
CISV Group (First Testing)	13	7.00	10	4.20
CISV Group (Second Testing)	13	7.38	10	3.60
High Popularity CISV (First Testing)	9	7.33	4	6.75
High Popularity CISV (Second Testing)	9	8.22	4	5.75
Low Popularity CISV (First Testing)	4	6.25	6	2.50
Low Popularity CISV (Second Testing)	4	5.50	6	2.17

Table 5
 Analysis of Variance (2 x 2 x 2 with repeated measures on the third factor) of Paired Hand Test Scores for Two Subject Groups (CISV popularity groups, high, low) and Sex Groups Over Two Testings

	<i>df</i>	<i>MS</i>	<i>F</i>
<i>Between</i> (Total)	15		
A (Sex)	1	57.78	4.80*
B (Popularity)	1	75.03	6.24*
AB (Sex x Popularity)	1	.78	
Error	12	12.03	
<i>Within</i> (Total)	16		
C (Test-retest)	1	.28	
AC (Sex x Test-retest)	1	1.53	
BC (Popularity x Test-retest)	1	.78	
ABC (Sex x Popularity x Test-retest)	1	9.04	3.63
Error	12	2.49	

Note: See Winer (1962, pp. 337-343) for an explanation of this model.

* $p < .05$

F (1,12); .05 = 4.75

boys based upon a sample of 24 boys was 4.00. A possible explanation is that this lack of difference relates to the low socioeconomic backgrounds of these children, but other groups of American public school children will have to be tested before any sound conclusions can be drawn.

The relationship between popularity and Paired Hands Test scores was also explored in the American public school group. They were asked in their classes to write down the names of their best friends on a card which they did not sign. From tallies made from this information four girls were found who had high popularity ratings and four were designated as low in popularity. The same was done for the boys. These 16 children were all taken from the group who were tested twice. Using a 2 x 2 x 2 ANOVA with repeated

measures on the third factor, test-retest, no significant difference was found between the high and low popularity groups on the Paired Hands Test. The authors feel that it is not surprising that Paired Hands Test scores were not found to be related to popularity ratings in the school setting, despite the significant relationship found between the two variables in the CISV setting. The CISV experience is known to be a deep and powerful one, and the children were asked to name their special friends after having lived together for almost a month. Classroom relationships may be less intense and therefore less likely to be related to deeper personality characteristics. This inference is supported by a separate finding from another test which was administered along with the Paired Hands Test in the research being reported. From the other test, the Fein Self-Image Scale³ of the Three Dimensional Personality Test (Allen, 1958; Fein, 1960), it was found that self-image

³ Unpublished study entitled "Dependency and self-image scales" based upon "Twitchell-Allen three dimensional personality test," 1966.

Table 6
 Analysis of Variance (2 x 2 x 2 with repeated measures on the
 third factor) of Paired Hand Test Scores of Two Subject
 Groups (CISV and finalist groups) and Sex Groups over Two Testings

	<i>df</i>	<i>MS</i>	<i>F</i>
<i>Between</i> (Total)	15		
A (Sex)	1	69.03	6.06*
B (Group)	1	26.28	2.31
AB (Sex x Group)	1	1.53	
Error	12	11.39	

<i>Within</i> (Total)	16		
C (Test-retest)	1	1.53	
AC (Sex x Test-retest)	1	.28	
BC (Group x Test-retest)	1	.28	
ABC (Sex x Group x Test-retest)	1	.79	
Error	12	2.30	

Note: See Winer (1962, pp. 337-434) for an explanation of this model

**p* .05

F (1, 12); .05 = 4.75

was related to popularity in the CISV group but not in the school sample (Zucker, 1967).

Clinical explorations with the Paired Hands Test have also supported the validity of the technique. When other information about a subject tested has been available, as when eight children in a special class for the emotionally handicapped were tested, test scores have conformed well with clinical impressions. A nonverbal girl who obtained a score of -1, for example, though outwardly passive, was judged by a clinician who worked with her individually as unable to speak because of intense inner hostility, and several high scoring children in this class (a boy with a score of 9 and a girl with a score of 7) were judged by student observers to be so affable, pleasant, and friendly that these students asked why the children had been placed in the special class.

Finally, an analysis of the difference between responses to a single hand and paired hands confirmed our expectation that the paired hands, which reflect some

kind of interaction, would have a far greater stimulus value than the single hands. The latter elicited a much higher percentage of zero responses. This demonstrated that the paired hands photographs were stimuli which elicited responses relevant to attributes of interacting human beings and which could be scored along a friendliness-hostility dimension.

Ongoing Research

Convinced that the Paired Hands technique has considerable potential, we have introduced refinements which are currently in the process of investigation. These include an elimination of the six single hand photographs, as a result of an item analysis, a sharpening of the administration and scoring procedures so as to reduce the loss of valuable data from "don't know" and other zero responses, and the investigation of other combinations of paired hands. An effort is also being made to investigate the predictive validity of this technique, since past studies only relate to concurrent validity.

REFERENCES

- Allen, D. T. *Twitchell-Allen three dimensional personality test: 1958 revised guide for administration and recording*. Chicago: C. H. Stoelting Co., 1958.
- Allen, D. T., & Mathews, W. P. *A handbook for children's international summer villages*. Chambery, France: Imprimeries Réunies, 1961.
- Bricklin, B., Piotrowski, Z., & Wagner, E. *The hand test*. Springfield, Illinois: Charles C. Thomas, 1962.
- Fein, L. G. *The three dimensional personality test*. New York: International Universities Press, 1960.
- Stone, I. R. Review of Bricklin, B., Piotrowski, Z., & Wagner, E., *The hand test*. *Journal of Projective Techniques*, 1962, 26, 490-491.
- Wagner, E. *The hand test: Manual for administration, scoring, and interpretation*. Akron, Ohio: Mark James Co., 1962.
- Winer, B. J. *Statistical principles in experimental design*. New York: McGraw-Hill, 1962.
- Zucker, K. B. Changes in self-image. Paper presented at the meeting of the American Psychological Association, Washington, D.C., September, 1967.

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The Fables Test¹

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Summary: Duess originally published her Fables Test in 1940, in a paper on the fables technique in psychoanalysis. The fate of the Fables in passing from the original French into English is explored here, and a new English version is given. The research literature on the test is reviewed, and a brief note is presented on the clinical usefulness of the Fables.

Just over a quarter of a century ago, Duess (1940) published in French a paper on the technique of using fables in psychoanalysis. The technique, though it had therapeutic implications, was primarily a diagnostic one. There were ten brief, incomplete "stories." In each of them the hero was in a situation meant to symbolically represent a source of unconscious conflict or anxiety as understood by psychoanalysis. As Duess used the test, the examiner read each fable and the S's completion of the story was interpreted in terms of apparent resistances, symbolic content, and variation from the more common responses. The present paper on the Fables has two sections. The main part deals with the history of the Fables Test's transitions from French into English, and a new English version is given.² In the second part, the research literature is reviewed, together with a brief note on the clinical usefulness of the Fables.

The Fables in English

Despert (1946) presented the first English translation of the fables in the version which became known as the Despert Fables. It was marred, unfortunately, by some literal infidelities to the original French and by insufficient attention toward preserving the carefully integrated psychoanalytic over-tones of the original. Certain of these changes and omissions probably changed or limited the range of responses which a child might give, al-

though no specific research has confirmed this. Fine (1948) introduced further changes into the fables and added ten more of his own, calling the full set "The Despert Fables (Revised Form)." Less widely known English versions have been published by Wertham (Wertham, 1954; Mosse, 1954) and by Wuersten (1960). The new translation presented here aims at closer fidelity to the original, consistency with the psychoanalytic concepts of the original, and idiomatic English simple enough to be understandable and interesting enough even to a very young child. As a test of this last aim, the Fables were given to a group of four-year-olds in a cooperative nursery school. Responses were generally easily obtainable from these children. The translation of the Fables is given below. The note in parenthesis after each number is the title and conflict area which Duess (1940) designated for it.

1. (The Bird Fable-to examine the attachment of the child to one of his parents or his independence). A daddy bird and a mommy bird and their baby bird are asleep in their nest on the branch of a tree. All at once a big wind comes. It shakes the tree, and the nest falls to the ground. The three birds wake up all of a sudden. The daddy flies quickly to one pine tree, the mommy to another pine tree. What is the baby bird going to do? He already knows how to fly a little bit.

2. (The Wedding Anniversary Fable-to see if the subject has witnessed a primal scene and to explore his jealousy of his parents' marriage). It is the anniversary of the day when daddy and mommy were married. They love each other very much, and they are having a beautiful party. During the party, their little boy (girl) gets up and goes off all alone to the end of the garden. Why?

3. (The Lamb Fable - to explore the

¹ An earlier version of this paper was presented at the Sixth International Congress of the Rorschach and Projective Techniques.

² The author wishes to express his appreciation to Dr. Mary Anne Siderits, of Marquette University, who helped try out various stages of the translation and who provided protocols and encouragement.

separation complex and sibling rivalry). A mommy sheep and her little lamb live in a field. The little lamb plays near his (her) mommy all day long. Every evening his (her) mommy gives him (her) some good, warm milk, which he (she) likes very much. He (she) does already eat grass. One day someone brings the mommy sheep a hungry baby lamb, so that she can give it some milk. But the mommy sheep does not have enough milk for both of them, and she says to the older lamb, "I don't have enough milk for both of you. Go eat the nice, fresh grass." What is the lamb going to do?

4. (The Funeral Fable - to explore hostility, death wishes, guilt and self-punishment). (Duess gives 2 versions of this, suggesting that the second one be used for children who do not know about death. The present writer almost always uses the second version, regardless of the child's age.)

a. A funeral procession goes through the town, and people ask, "Who has died?" Someone answers, "It is someone from the family that lives in that house over there." Who is it?

b. Somebody in the family took a train and went very far away, very far away, and will never come home again. Who is it? (Duess suggests that the examiner may name the members of the subject's family.)

5. (The Fear Fable - for anxiety and self-punishment). There is a boy (girl) who is saying very softly, "Oh, I am so afraid: What is he (she) afraid of?"

6. (The Elephant Fable - to examine the castration complex). A boy (girl) owns a little elephant, which he (she) likes very much, and which is very pretty with its long trunk. One day, coming home from a walk the boy (girl) comes into his (her) room and finds that his (her) elephant is quite changed. What about it has changed? Why is it changed?

7. (The Hand-Made Object Fable - to test possessiveness and obstinacy, and the anal complex). A boy (girl) has managed to make something out of clay, a castle, which he (she) thinks is very, very pretty. What will he (she) do with it? His (her) mommy asks him (her) to give it to

her. He (she) can decide whichever way he (she) wants. Will he (she) give it?

8. (A Walk with Father or Mother - to disclose the Oedipus complex). A boy (girl) has been for a very nice walk in the woods, all alone with his (her) mommy (daddy). They have had a wonderful time together. When he (she) gets home the boy (girl) sees that his (her) daddy (mommy) has a different expression on his (her) face than usual. Why?

9. (The News Fable - to become acquainted with the wishes or fears of the subject). A boy (girl) comes home from school (or from a walk). His (her) mommy says to him (her), "Don't start your homework right away. I have some news to tell you." What is his (her) mommy going to tell him (her)?

10. (The Bad Dream - as a control for the preceding fables). A boy (girl) wakes up very tired one morning and says, "Oh, what a bad dream I had!" What did he (she) dream?

The earliest and one of the most interesting experimental papers is by Duess herself (1944). A group of normal and a group of neurotic children were given the Fables Test. They were then told how their answers could be interpreted to discover things about them, and the test was given again. The normal Ss gave essentially the same answers, while the neurotic ones showed various indications of increased resistances. The style of resistance and defense seemed to be caused more by the age and developmental stage of the child than by his particular neurotic pattern. Ducros (1959) compared responses with children of normal family situations to those of children from family settings which were disturbed in various ways. She found that fables 1, 2, 4 and 5 were particularly successful in distinguishing the abnormal family settings from the normal.

Fine (1948) used some of the fables to successfully distinguish between asthmatic children and their normal siblings. The responses were interpreted as indicating greater dependency and hostility in the asthmatic group. Peixotto (1956, 1957) administered Fine's twenty fables version of the test to school children in attempts to determine the popular responses and the test - retest reliabilities for each fable.

Her use of a group administration technique makes it questionable whether the results may be directly generalized to the individual administrations used in other studies and in clinical practice. Her categories for classifying response content might, however, provide a good start for future research.

There is a need for methods of analyzing the Fable responses which will preserve much of the rich range of individual differences, while permitting reasonable interscorer reliability. Such a system would improve clinical usefulness as well as making research more feasible. Presently, for lack of a scoring approach and baseline data, the responses are interpreted within a general projective framework. Response content is, of course, only one aspect. Another is the "reality level" of the response; i.e., how much distortion of the original fable is suggested by the answer (This roughly corresponds to form-level of the Rorschach). There are also response style elements, including reaction time, refusal to answer, length of response, degree of detail or elaboration, and unusual vocal behavior, such as whispering or very rapid speech. Motor behavior during the presentation of the fable and the auditory response also deserve study. Clearly, some of these elements will be harder to establish reliable scoring for than others.

Duess originally intended to use her fables only with children. She noted with surprise that her adult Ss also appeared to give meaningful responses (Duess, 1940). The present writer has also found the Fables useful with adults and adolescents. The following instructions have been found useful with these older Ss: "These are ten little stories, the sort you might tell to young children. Try to get into the spirit of it, and tell me how you would

finish or answer each one." The simplicity of the Fables Test has made it useful with very young children. The present writer has also found it particularly useful in getting material from Ss of various ages, and where the use of other projective techniques is limited by such deficits as blindness, brain damage, and severe mental deficiency.

REFERENCES

- Despert, J. L. Psychosomatic study of fifty stuttering children. *American Journal of Orthopsychiatry*, 1946, 16, 100-113.
- Ducros, M. Des réponses fournies aux "fables de Duess" par les enfants vivant dans un milieu familial anormal. *Enfance*, 1959, 2, 153-180.
- Duess, L. La méthode des fables en psychoanalyse. *Archives Psychologie Geneva*, 1940, 28, 1-51.
- Duess, L. Etude expérimentale des phénomènes de résistance en psychoanalyse infantile. *Zeitschrift für Kinderpsychiatrie*, 1944, 11, 1-11.
- Fine, R. Use of the Despert fables (revised form) in diagnostic work with children. *Rorschach Research Exchange and Journal of Projective Techniques*, 1948, 12, 106-118.
- Mosse, H. L. The Duess test. *American Journal of Psychotherapy*, 1954, 8, 251-264.
- Peixotto, H. E. Reliability of the Despert fables, a story completion projective test for children. *Journal of Clinical Psychology*, 1956, 12, 75-78.
- Peixotto, H. E. Popular responses for the Despert fables. *Journal of Clinical Psychology*, 1957, 13, 73-79.
- Wertham, F. *Seduction of the innocent*. New York: Rinehart, 1954.
- Wuersten, H. Story completions: Madeleine Thomas stories and similar methods. In A. I. Rabin & Mary R. Haworth (Eds.), *Projective techniques with children*. New York: Grune & Stratton, 1960.
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A New Method of Summarizing Perceptual Accuracy on the Rorschach

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Summary: This paper presents a new method of reflecting perceptual accuracy in Rorschach scoring summaries which is felt to have four major advantages over previous methods: (a) maximal utilization of data, (b) improved reliability of scoring, (c) relative purity of measurement and (d) greater interpretive potential. The method involves the use of two accuracy ratios: Rorschach's $F+$ and a new ratio, $B+$, which includes all blends of form plus other determinants, irrespective of primacy.

Measurement of perceptual accuracy has been a central feature of Rorschach's test since its inception: almost all ink blot responses involve form and all responses involving form are rated as to their goodness of fit with the stimuli, indicated in most scoring systems by either a plus or a minus. Since accuracy of perception on the Rorschach is interpreted as a sample of accuracy of perception in general, the resultant summarization of accuracy scores, usually expressed as a ratio, is taken as an index of the degree of accuracy or distortion in the S 's perception of reality. Problems exist, however, with regard to the criteria used in assessing accuracy and with regard to the manner of reflecting accuracy in the scoring summary. This paper deals with the latter problem only, offering a critique of previous methods of accuracy summarization and suggesting a new method which is thought to have four major advantages over previous methods.

Problems in the method of summarizing form accuracy arise from the fact that there are three different types of form responses on the Rorschach: those in which form is the sole determinant (pure form responses), those in which form is the dominant determinant (primary form responses), and those in which form is subordinate to some other determinant (secondary form responses). Rorschach himself and everyone who followed him scored all three types of form response as either plus or minus. However, in summarizing form accuracy, Rorschach included only pure form responses, using

the formula $F+ = \frac{F+}{(F+) (F-)}$, which Beck (1961) has retained unaltered and un-

supplemented. Other authors (e.g., Rapa-port, Schafer, and Gill, 1946) have tended to retain the Rorschach-Beck $F+$ ratio but to supplement it, most often with the extended $F+$ ratio which includes pure form and primary form but leaves out secondary form.

The suggestion advanced in this paper is that the Rorschach-Beck $F+$ ratio be supplemented with a new ratio which includes primary and secondary form and excludes pure form. Thus, the proposed new ratio would include all blends of form with other determinants regardless of whether form was a primary or a secondary element in the response. This ratio will hereafter be referred to as $B+$ and it is proposed as a supplement to $F+$ and a substitute for extended $F+$. This method of reflecting perceptual accuracy on the Rorschach is believed to have the following advantages: (a) maximal utilization of data, (b) improved reliability of scoring, (c) relative purity of measurement, and (d) greater interpretive potential.

Data Utilization and Scoring Reliability

Using $F+$ alone is a wasteful procedure. If it is worth the trouble to score form blends as plus or minus, then it should be worth the trouble to include that information in the scoring summary. Supplementing $F+$ with extended $F+$ reduces but does not eliminate data wastage because plus and minus scores accorded to secondary form responses are still left out.

With regard to reliability, as Rorschach (1921, p. 30) noted, it is relatively easy to distinguish between pure color responses and color form combinations but very difficult to distinguish color form combi-

nations of the *FC* type from those of the *CF* type. Since the extended *F+* ratio is heavily dependent on the ability of scorers to make the latter distinction while the *B+* ratio is not, both inter- and intra-scorer reliability should be higher for *B+* than for extended *F+*.

Greater Purity of Measurement

B+ is a purer measure than extended *F+* in at least three senses. First, as a supplement to *F+*, *B+* is purer because it does not overlap with *F+* by virtue of including the same items, whereas extended *F+* does overlap with *F+* in this way. Second, *B+* is purer because it separates two variables which are confounded in the extended *F+* ratio: accuracy of perception in the absence of manifest affect (*F+*) and accuracy of perception in the presence of manifest affect (*B+*), a distinction which will be discussed in more detail later.

B+ is also believed to be a purer measure involves a division of data on the basis of a value judgment which is mistakenly perceived as an objective fact. The value judgment referred to is the belief that pure form and primary form responses "go together" because both are generally "healthier" and/or "better" than secondary form and nonform responses. Behind this value judgment is the assumption of the existence of a linear scale with pure and primary form responses at the healthy end, secondary form responses in the less healthy middle and formless responses at the distinctly unhealthy end. Actually, however, when after-the-fact value judgments like "egocentric" and "narcissistic" are stripped away, what seems to underlie the scale is not a linear index of healthy vs. sick affect but a continuum having to do with the intensity and immediacy of affective experience. Thus, when

color is the affective determinant involved, *FC* reflects a mild affective experience expressed in controlled fashion, *CF* reflects an intense affective experience expressed spontaneously and pure *C* reflects an overwhelming affective experience expressed impulsively.

Seen in this light, the reasons for considering pure color responses unhealthy seem sound, obvious and objective but the reasons for considering *FC* superior to *CF* do not. Instead, they seem to rest upon a biased value judgment, an arbitrary preference for cool restraint as opposed to passionate involvement.

Superficially, this preference seems to stem from a belief that the former type of response somehow insures objectivity and accuracy whereas the latter leads almost inevitably to subjectivity and distortion. In fact, the relation is not so simple; form primacy does *not* determine form accuracy and strong emotion may or may not distort judgment. In the Rorschach, as in life generally, *CF* responses may be plus just as easily as they may be minus and conversely, *F* and *FC* responses may be minus just as easily as they may be plus. Thus, neither one is intrinsically better, healthier or more accurate than the other.

On a deeper level, the preference for form dominated over affect dominated responses seems to arise out of the domain where sociology and psychology merge in that it reflects cultural as well as personal values. In this country, for example, white Protestant Americans are the dominant group and their distrust and dislike of emotionalism as described by Erikson (1963) and others is well-reflected in the preference for an *FC* over a *CF* style of response.¹ This preference is a perfectly legitimate thing, as long as it is recognized for what it is, a personal preference with cultural roots and not a universal value or an absolute standard of health, goodness and right-thinking. Lack of objective basis for the preference has already been commented on. Lack of universality of the preference also merits discussion. Thus, minority groups in this country, e.g. Jews, Negroes, Southern and Eastern Europeans, have tended to approve great-

¹ Rorschach himself expressed this preference (1921, p. 33) initially, discussing *CF* in basically negative terms as egocentric and *FC* in basically positive terms as adaptive. Later, however, as Schachtel (1966, pp. 178 and 179) points out, Rorschach became more interested in the positive implications of *CF* with regard to vitality and aliveness and the negative implications of subordination of color to form.

er degrees of emotionalism and to reject the Anglo-Saxon notion that intense feeling is suspect. These people may well produce more *CF* and less *FC* on the Rorschach without being necessarily sicker or less accurate than their Anglo-Saxon contemporaries.²

Differences in preferred style of response are not confined to ethnic, racial or national groups nor are they uniform or fixed within groups. Inter- and intra-generational differences also exist and vary over time. For example, one might summarize trends over the last two decades by suggesting that trend setters of affective style among adolescents and young adults have tended to come from minority groups rather than from the majority. However, in the fifties, these minority group trend setters carried Anglo-Saxon preferences to an extreme with their emphasis on "keeping one's cool" as the prime value whereas in the sixties, minority group trend setters did an about face and opted in favor of intense concern and passionate commitment, berating their elders for lack of same.

The implication of all this is that if we are to fairly assess and constructively assist such people as deviant majority group adults, nondeviant ethnic and racial minority group members, student activists and hippies, and a host of other potential clients who do not share the traditional Anglo-Saxon preference for an *FC* response style, we must avoid imposing our personal preferences on them and we must purify our measures of personality so as to eliminate this type of bias from them. Assessing accuracy of perception with two separate and distinct but equally important ratios, *F+* and *B+* is a step in this direction. In this sense, *B+* is a purer measure than the value loaded extended *F+* which discards data on the potential accuracy of emotionally intense perceptions.

Greater Interpretive Potential

At the most abstract level, the assumption behind this claim is that the distinction between perceptual accuracy in the absence of affect (*F+*) and perceptual accuracy in the presence of affect (*B+*) is more fundamental and inclusive than that between pure form (*F+*) and pure form plus primary form (extended *F+*). As a result, one can make more meaningful interpretations on the basis of the former than on the basis of the latter. Potential arenas for testing such a claim are multiple; practicality compels the choice of a single one and personal considerations determine which one. As a clinician and clinical researcher especially concerned with the relevance of testing to treatment, the present writer prefers to base her case on the interpretive utility of the *B+*, *F+* combination in that arena.

Using *B+* and *F+* ratios, treatment recipients may be classified into four groups: those in which both ratios are high, those in which both are low, those in which *F+* is high and *B+* is low, and those in which the converse is true. Preliminary data from a psychotherapy study in progress suggests that many treatment recipients fall into the latter two groups, showing sizable discrepancies between their *F+* and *B+* ratios. In cases where *F+* is high but *B+* is low, we seem to have a person who perceives reality accurately when emotion is absent but tends to distort when emotion comes into play. *Ss* with this pattern are often not nearly as adequate as their *F+* and/or extended *F+* ratios would indicate. In cases where *B+* is high but *F+* is low, we seem to have a person who perceives reality accurately when he allows his emotions free rein but tends to distort when affect is suppressed. *Ss* with this pattern are often much more adequate than their *F+* and/or extended *F+* would indicate. Treatment recipients seem likely to respond differentially, depending on which of these two patterns they manifest at pretherapy and advance knowledge of such differences may help therapists to respond more appropriately. Finally, shifts in pattern from pre- to posttherapy may

² The feasibility of using the Rorschach to explore differences in modal personality between members of various American subcultural groups has been demonstrated by studies like that of Singer and Opler (1956).

help therapists to more accurately assess the success of their endeavors.

Discussion

This paper has presented a largely theoretical argument for a new way of summarizing perceptual accuracy on the Rorschach. In homelier terms, it involves adding no new ingredients to the basic Rorschach recipe but merely suggests a new way of cutting the pie. Yet, seemingly minor decisions about where to cut the pie can have major implications, as illustrated, for example, by Wechsler's decision to make a clear distinction between intellectual functioning on verbal and performance tasks.

Hopeful analogies notwithstanding, the worth of the suggestion advanced here must ultimately be decided by research; but in terms of initially appropriate criteria such as susceptibility to empirical test and heuristic value, it seems to hold up well. Most immediately, it can be tested and its value can begin to be assessed by the collection of the following kinds of data: (a) data on differential frequency of form dominated vs. affect dominated responses in cultural subgroups, (b) data on the utility of the $B+$, $F+$ ratio combination in clarifying differential individual reactivity and suggesting differential treatment for psychotherapy

recipients, (c) data on the utility of the $B+$, $F+$ ratio combination in assessing psychotherapeutic outcome.

In a psychotherapy research project currently being conducted by the author, some initial data of this kind is being collected. This paper is being presented at this time in the hope that other researchers will be motivated to collect similar data and to experiment with additional uses for the new ratios described here.

REFERENCES

- Beck, S. J., Beck, A. G., Levitt, E. E., & Molish, H. B. *Rorschach's Test I. Basic processes*. New York: Grune & Stratton, 1961.
- Erikson, E. H. *Childhood and society*. New York: W. W. Norton, 1963.
- Rapaport, D., Schafer, R., & Gill, M. *Diagnostic psychological testing. Vol. II*. Chicago: Year Book Publishers, 1946.
- Rorschach, H. *Psychodiagnostics: A diagnostic test based on perception*. Bern: Hans Huber, 1921.
- Schachtel, E. G. *Experiential foundations of Rorschach's Test*. New York: Basic Books, 1966.
- Singer, J. L. & Opler, M. K. Contrasting patterns of fantasy and motility in Irish and Italian schizophrenics. *Journal of Abnormal and Social Psychology*, 1956, 53, 42-47.

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Body Awareness in Certain Types of Speech Defective Individuals

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Summary: Of 24 boys between the ages of 8 and 12 years who were tested individually with the Rorschach, 8 were stutterers in treatment, 8 were in treatment for articulation defects, and 8 were selected randomly from a group of individuals with normal speech. The Rorschach responses were scored from body-interior awareness and body-boundary awareness. The null hypothesis was that there would be no significant differences among the groups. Stutterers scored significantly ($p < .01$) higher than the other 2 groups on the body-boundary dimension. No other significant differences were found. Stutterers seem more aware than articulation-defectives and normals of their body boundaries.

Fisher and Cleveland (1958) proposed that individuals differ in the degree of finiteness that they ascribe to their body boundary. They hypothesized a continuum, consisting at the one end of individuals who perceive their bodies as firm and definite, and at the other of individuals who have great difficulty delineating their body boundaries, and who are more aware of the internal layers of their bodies. Using the Rorschach technique, they developed a reliable index to test these continua, and classified the scores into two categories: body-boundary and body-penetration scores. However, Cassell (1964) pointed out that both of these scores pertained to the boundary, as the penetration score consists of body-boundary indefiniteness and body-interior awareness. He suggested that this might be the reason why Fisher and Cleveland did not obtain the expected negative correlation between the body-boundary and body-penetration scores.

Cassell altered Fisher and Cleveland's method, developing an index of body-interior awareness to replace the body-penetration index. This appeared to be negatively related to the body-boundary scores, and more sensitive than the body-penetration index. Another interesting finding was that women had significantly higher body-boundary scores than men. These results suggested to Cassell that a subtle interaction might exist between an individual's system of body attitudes and the way in which he channels psychophysiological excitation in both health and disease. It is interesting to note that a high body-boundary score acquired a decisively positive connotation (Fisher and

Cleveland, 1965): "Overall a picture has emerged of the individual with definite boundaries as more active, independent, autonomous, communicative, and also more likely to channel excitation to the exterior (effector) layers of the body than the individual with indefinite boundaries [p. 54]." Recently Megaree (1965) noted that juvenile delinquents had significantly lower barrier scores than did the nondelinquent sample, and that moreover the barrier scores of the more seriously delinquent juveniles were significantly lower than those of the less seriously delinquent boys. He concludes: "High barrier scores were associated with adaptive behavior while low barrier scores were associated with maladjusted behavior [p. 310]."

The phenomena of speech disturbances, particularly stuttering and defective articulation, raise interesting questions in the context of the body-boundary and the body-interior awareness dimension. In the more severe forms of stuttering, common symptoms, such as gross facial distortion, seem to focus on the periphery of the body. Research data (Bloodstein, 1959; Johnson, 1959) have revealed that stutterers tend to have sicknesses, such as allergies, which focus symptomatically on the exterior layers of the body. While mainly a phenomenon of youth, it is found predominantly among boys. It seemed logical, therefore, to anticipate that stutterers would have higher barrier scores than normals, i. e. persons without identifiable speech difficulties. Considering the symptomatology of defective articulation, a similar, although less extensive difference seemed probable.

In the present study it was anticipated that stutterers would have higher body-boundary scores than would articulation defectives, and that the latter group would have higher body-boundary scores than a group without any overt speech disturbances. It was expected that the stutterers would have the lowest body-interior awareness scores, following by the articulation defectives and normals, in that order. The purpose of this study was not only to validate previous studies and to evaluate Cassell's method, but also to explore further the body-boundary and body-interior awareness dimensions of the "body image." The practical implications for the understanding and treatment of these speech disturbances also seemed important.

The specific hypotheses tested were: (1) The normal group would not differ significantly from the articulation-defective group in their scores on both the body-boundary and body-interior awareness index, (2) the normal group would not differ significantly from the stutterer group in their scores on both indexes, and (3) the stutterer group would not differ significantly from the defective-articulation group in their scores on both indexes.

Method

Subjects

The *Ss* in this investigation were 24 boys between the ages of eight and twelve years. The average age for all of the *Ss* was nine years and five months. Eight of the boys were in treatment for stuttering and formed the stutterer group. These boys were the entire stutterer population of a speech clinic in the midwest. Eight other boys were selected at random from a group of articulation defectives at the same clinic. The last group of eight boys was randomly selected from boys without overt speech disturbances, from an ordinary school setting.

Procedure and Design

The materials consisted of all ten cards of the Rorschach. For the scoring of the body-boundary dimension, the index developed by Fisher and Cleveland (1958) was used. This index, sometimes referred

to as the barrier score, equals the number of responses elicited that are characterized by an emphasis upon the protective, containing, decorative, and covering functions of the periphery. Boundary definiteness is equated with the number of barrier responses produced. This index can be scored with high reliability, and adequate test-retest reliability has been demonstrated by recent research.

The body-interior awareness index developed by Cassell (1964) was used to score this dimension, as this index is supposedly more sensitive than the original body penetration index developed by Fisher and Cleveland (1958). The original body-penetration scores were based upon responses in which there was a violation, disruption or passage through the spatial area designated by the boundary of the inkblot. Cassell included all these, but excluded those responses which were felt to include body-boundary indefiniteness (essentially, these were responses that did not pertain to the body directly). In addition, he included all references to internal organs. Body-interior awareness is equated with the number of these responses produced.

The examiner administered the Rorschach to each *S* individually, spending at least half an hour before the actual testing to establish rapport with the child and to create a warm and friendly atmosphere. In no case was the testing actually started before the examiner felt certain that rapport had been established and that he could understand the *S's* speech. Standard instructions were given, except that the *S's* were asked to give at least three responses per card.

The data were analysed by means of an analysis of variance. Duncan's New Multiple Range Test was used to compare the treatment means of the different groups. The level of significance chosen was the .01 level for all data.

Results

Table 1 reveals significant differences among groups and between treatments. However, closer scrutiny reveals other interesting differences. Table 2 shows these differences more clearly.

Table 1
Analysis of Variance of the Data of Adjunct 1

Source	df	MS	F
Speech Groups (A)	2	10.45	7.36*
Error	21	1.42	
Body Awareness (B)	1	357.10	410.40*
A X B	2	39.10	44.90*
Error	21	.87	

* $p < .01$

Table 2
Duncan's New Multiple Range Test Applied to
Differences between Group Means

Mean Scores	0.5 ^a	1.4 ^b	2.1 ^c	5.3 ^d	5.6 ^e	10.0 ^f	R
0.5 ^a		.9	1.6				2.77
1.4 ^b			.7				2.88
2.1 ^c							2.94
5.3 ^d					.3	4.7*	2.97
5.6 ^e						4.4*	2.99

* $p < .01$

^a Stutterers body-interior awareness

^b Articulation defectives body-interior awareness

^c Control group body-interior awareness

^d Control group body-boundary awareness

^e Articulation defectives body-boundary awareness

^f Stutterers body-boundary awareness

The null hypothesis that there will be no differences between the control group and the articulation group has been sustained on both indexes. However, the stutterers differed significantly from both the defective articulation group and the control group on the body-boundary index. No significant difference was found among the groups on the body-interior awareness index.

It appears that the mean scores of the articulation defectives fall between those

of the stutterer group and the control group, closer to the latter.

Table 3 indicates that there is a considerable difference between the body-boundary score range of the stutterers and the ranges of the other groups. The two other ranges seem fairly similar. Table 3 seems to suggest a heterogeneity of variance that should have an effect on data in Table 1, since the range of scores seems to increase more in the case of speech defective groups, and most in the case of stutterers.

Table 3
Range of Scores on the Two Indexes

Group	Body-Interior Awareness	Body-Boundary Awareness
Stutterers	2	5
Articulation-Defectives	1	3
Control	3	2

Discussion

From the results stutterers appear to differ measurably from the other two groups on the body-boundary index. Although there seem to be slight differences in the predicted direction between the control group and the articulation defectives, these differences are not statistically significant. It appears that these three groups are not, as predicted, on a continuum of body-boundary awareness. Considering the fact that the age of these boys is also the age at which articulation defects begin to disappear, and the possibility that less severe articulation defectives might have volunteered for this study, one may speculate that more pronounced differences might be found at a different age level, or with a sample of more severely articulation-defective individuals.

The three groups do not differ significantly on the body-interior awareness index. This fails to reflect the findings by Cassell (1964) that the altered index is very sensitive to changes on the body-boundary index. This failure of the results to reveal differences might be due to several facts, such as the insensitivity of this index, or that the groups were actually similar on this index. Earlier studies (Fisher and Cleveland, 1958) of the relationship between these two types of body awareness seem to support the latter possibility. Previous studies (Bloodstein, 1959) revealed no significant differences between the Rorschach responses of normal speakers and stutterers. The present results seem to indicate that stutterers differ significantly from the other

two groups used in this study on the body-boundary dimension, but not on the body-interior awareness index.

Johnson (1959) stated that stuttering "starts in the ear and not in the mouth," by which he means that children are made increasingly aware of their stuttering by parents and other authority figures. He states that these people react most heavily against the facial grimaces of stutterers. In view of the obtained difference on the body-boundary index, one may speculate that the focus of their symptomatology increases the bodily concern of the stutterers and reinforces their focus upon the periphery of their bodies. A basic question in this respect is whether body-boundary fluctuations represent forces in change processes or whether they are subsidiary effects. At this point available information does not permit a meaningful answer.

In their various techniques, Van Riper (1958) and other prominent therapists in this field focus on the contour, the periphery of the body. For example, the patient must learn pronunciation through self-observation in a mirror, tighter control of lips, or relaxation of facial muscles. The present findings raise a question about the desirability of such methods.

It is noteworthy that stuttering is a defect found predominantly among boys, and that this group has a high body-boundary awareness. Cassell (1964) pointed out that men had a lower body-boundary awareness than women. Although in this study there has been no direct comparison of sex differences, the results raise the question as to whether this body-

boundary focus among stutterers is simply a function of their defect, or whether more basic factors might be involved, such as developmental differences. Lack of empirical data is regrettable and represents a gap in understanding of the body-boundary dimension.

The available empirical data points to the rich possibility of a body-boundary approach to the understanding of body perception and experience. To some extent, the study validates similar studies on a different group of subjects, and points to the multiple use of the Rorschach technique. It brings to the fore difficulties in the eventual formulation of the "body image" concept.

REFERENCES

- Bloodstein, O. *Stuttering for professional workers*. Chicago: Nat. Soc. for crippled Children and Adults, Inc., 1959.
- Cassell, W. A. A projective index of body-interior awareness. *Psychosomatic Medicine*, 1964, 26, 162-177.
- Fisher, S. & Cleveland, S. Personality, body perception and body boundary image. In S. Wapner & H. Werner, (Eds.), *The body percept*. N. Y.: Random House, 1965. Pp. 45-67.
- Fisher, S. & Cleveland, S. E. *Body image and personality*. Princeton, N. J.: Van Nostrand, 1958.
- Johnson, W. *The onset of stuttering*. Minneapolis: Univ. of Minnesota Press, 1959.
- Megargee, E. J. Relation between barrier scores and aggressive behavior. *Journal of Abnormal Psychology*, 1965, 70, 307-311.
- Van Riper, C. Experiments in stuttering therapy. In Eisonson, J. (Ed.), *Stuttering: A symposium*. N. Y.: Harper, 1958.
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Blacky the Cat, I: Semantic Differential Ratings¹

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Summary: Two criteria for an alternate form of the Blacky Test, designed to facilitate female identification with Blacky are suggested: 1) the main character must be perceived by females as more feminine than the original stimulus, and 2) the main character must not be viewed differently by male and female Ss in other respects. Semantic Differential ratings of both the original Blacky stimuli and a revised "sexually neutral" cat form (N = 320) indicated that an alternate version could meet both these requirements. Differences between the responses of female Ss to both forms were further shown to be a) generally specific to female Ss, b) specific to the character of Blacky (rather than Mama) and c) often enhanced when Ss made judgments after having seen all twelve cartoons of the test, rather than only the first two.

A number of studies of female Ss' identification of the main character of the Blacky Test have suggested that rather than see the dog as feminine, these Ss tend either to give Blacky a masculine identity as often as male Ss do (Wolfson and Wolff, 1956; Dean, 1959; Rossi and Solomon, 1961) or to give uncertain identifications of Blacky (Neuman and Salvatore, 1958; Stricker, 1963). On the basis of their findings, Neuman and Salvatore (1958), Dean (1959), and Rossi and Solomon (1961) each suggested that a parallel series of Blacky pictures, using either a black or a white cat, be devised to facilitate feminine identification for female Ss. However, King and King (1964), using a white cat, and Robinson and Hendrix (1966), using a "sexually neutral" black cat, found that these stimuli were evaluated as equally masculine as the original dogs by female Ss. Subsequently, Robinson (1968) found clear-cut differences between female Ss' identification of the black dog and a black cat only when she extensively "feminized" the original stimuli through the addition of long eyelashes and a bow to the figure of the black cat.

The above evidence is, however, still somewhat ambiguous, for at least two reasons. First, although the above studies indicate that *uninstructed* female Ss see all

but blatantly feminized versions of Blacky as masculine, the test manual clearly specifies that all Ss are to be *instructed* as to Blacky's sex by the examiner "to make it easier for the subject to identify with the cartoon figure" (Blum, 1949, p. 20). Consequently, the nature of identification responses of uninstructed Ss may be trivial, unless similar findings arise in the actual administration of the test. However, only Neuman and Salvatore's (1958) factor analysis of Blum's standardization data has suggested that this may be the case; and a more sophisticated repetition of this analysis (Robinson and Hendrix, 1966) has failed to confirm Neuman and Salvatore's findings, indicating instead that the underlying structures of male and female Ss' responses to the Blacky Test were quite similar. Second, the data presently available are restricted by the fact that in the majority of the above-cited studies the actual measures of Ss' identification of Blacky consisted only of 2- or 7-point "masculine-feminine" scales, which allowed only limited opportunity to assess as complex a concept as that of "identification."

The uncertainties in the evidence presently available may perhaps best be resolved by designing an alternate form of the Blacky test which can be shown to possess the following properties:

a) the character of the main figure is viewed by female Ss as more feminine than Blacky the Dog;

b) the character of the main figure is not viewed as different by male and female Ss in other respects.

Such an alternate form would then en-

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sure both that female Ss are able to identify the main figure appropriately and that the test is suitable for all Ss, regardless of sex. Only when both these criteria are met can *both* forms of the Blacky test be administered to male and female Ss, so that any systematic differences can be explored to shed additional light on Freudian psychosexual developmental concepts.

The two alternate forms of the Blacky Test that have been designed for this purpose, however, each appear unable to meet one or the other of these criteria. The white cat of King and King (1964) was not viewed as more feminine than the black dog by female Ss; and the "feminized" black cat of Robinson (1968) is clearly inappropriate for use with male Ss. The present study reports an investigation of the stimulus properties of a third alternate form of the Blacky Test, consisting of cartoons of "sexually neutral" black cats, in situations otherwise identical to those of Blum's original test series.

Method

Materials

The *stimulus* materials of the present study consisted of two forms of the Blacky Test: the original (Blum, 1949) and an alternate form which substituted cats for dogs. The Anal Sadism card represents the most drastic change that had to be made in any of these stimuli, replacing the doghouses of the original with wicker baskets for the cats.

The *response* materials consisted of four identical 14-scale versions of Osgood, Suci, and Tannenbaum's (1957) Semantic Differential (SD). The scales were selected so that four represented the Evaluative factor, four the Activity factor, and four the Potency factor. In addition, a "masculine-feminine" scale and a "violent-gentle" scale, which have been shown (Osgood, et al., 1957) to be highly correlated with "masculine-feminine," were combined with two scales from the potency factor (on which both typically load quite highly) to yield an *a priori* Masculinity factor, comparable to the other three SD factors, though not, of course, orthogonal to them. Thus, 18 variables, comprising 14 SD

scales and 4 factors, were scored for each S. (For convenience below, the initial letters of *factors*- e.g., Masculinity-Femininity-will be capitalized, while those of *scales*- e.g., masculine-feminine-will be left in lower case.) Eight of these 18 variables (the six scales comprising the Masculinity and Potency factors, plus these two factors) served as measures of the object's sex, while the other ten (the eight scales comprising the Evaluation and Activity factors, plus these two factors) served to assess any other major differences in the way the stimulus objects were evaluated.

For any concept rated, the order of the scales on the page was randomized and the right-left arrangement of poles was also randomly determined. All Ss used the same form for all concepts, however, with Osgood's instructions for the SD printed on the front of each answer booklet. No other information, save the S's name was elicited.

The four concepts which Ss were asked to evaluate included both Blacky and Mama, after seeing only the first two cards of the cartoon series, and again after having seen the entire series. (In studies in which Blacky's sex is not explicitly given Ss by the experimenter's instructions [e.g., those of King & King, 1964, and of the present writer], "objective" evidence of Blacky's sex is provided Ss only *after* they have seen both the Frontispiece and Card 1 of the test, in the inquiry for that card. For this reason, the design of the research reported below allowed Ss to see both these cards before making their judgments.)

Subjects

All Ss were introductory psychology students, unfamiliar with the Blacky Test. They were tested in two groups, one receiving the original Blacky the Dog cartoon stimuli, the other the alternate Blacky the Cat form. Male and female protocols were separated after testing, to form four groups (males rating dogs, males rating cats, females rating dogs, females rating cats), and a table of random numbers was used to reduce each of the groups to the size of the smallest (80). Thus, 320 Ss were evaluated in all.

Procedure

Ss were read the instructions for the SD, told that they would be shown several cartoons, and from time to time asked to rate one or the other of the characters in these cartoons. The first two cartoons were shown, with a modified version of E's comments (e.g., "Here is Papa, Mama, Tippy, and Blacky, who is the main figure in the cartoons."), and Ss were asked to rate Blacky on the 14 SD scales. When they finished, they were asked to rate Mama on the next page. The

remaining 10 cartoons were shown, with similarly modified comments (to avoid sexual identification of Blacky), and the two rating procedures repeated.

Results

Overall analyses of variance for each SD scale and factor indicated significant main and interaction effects on each of these variables. These were then examined in more detail through the use of Duncan multiple-range *t* tests. Table 1 summarizes the means and significant differences

Table 1
Mean Ratings of Blacky, First Administration
with Significance Levels (Duncan Multiple-Range *t*)

Variable	Significance of Differences							
	Females		Males		Females		Dogs	Cats
	Cat	Dog	Cat	Dog	D-C	D-C	M-F	M-F
1. masculine-feminine	5.40*	5.40*	4.81*	4.99*	—	—	.05	.01
2. violent-gentle	2.51*	2.95*	2.82*	2.91*	.05	—	—	—
3. large-small	2.51*	4.14	2.96*	3.95	.01	.01	—	.05
4. strong-weak	3.61*	4.07	4.02	3.84	—	—	—	—
5. heavy-light	3.70	4.34*	3.80	4.04	.01	—	—	—
6. hard-soft	2.24*	2.94*	2.64*	3.11*	.01	.01	—	.05
7. active-passive	5.35*	5.05*	5.54*	4.96*	—	—	—	—
8. fast-slow	4.62*	4.12	5.01*	4.38*	.05	.05	—	—
9. sharp-dull	4.60*	4.32*	4.72*	4.18	—	.05	—	—
10. hot-cold	4.81*	4.81*	5.22*	4.79*	—	.05	—	.05
11. good-bad	5.52*	5.22*	5.32*	5.18*	—	—	—	—
12. happy-sad	6.40*	5.88*	6.15*	5.99*	.05	—	—	—
13. wise-foolish	4.69*	4.52*	4.76*	4.25	—	.05	—	—
14. kind-cruel	4.94*	5.00*	4.61*	4.96*	—	—	—	—
15. Masculinity (sum of 1,2,3,4)	14.08*	16.56	14.62*	15.68	.01	—	.05	—
16. Evaluation (sum of 11,12,13,14)	21.55*	20.62*	20.55*	20.39*	—	—	—	—
17. Potency (sum of 3,4,5,6)	12.06*	14.77*	13.42*	14.94*	.01	.01	—	.01
18. Activity (sum of 7,8,9,10)	19.39*	19.31*	20.50*	18.31*	—	.01	—	—

* *t* between this value and neutral judgments
(4.00 for scales, 16.00 for factors) is significant at $p < .05$

between male and female Ss rating Blacky the Dog and Blacky the Cat. Female Ss apparently see the dog as significantly higher in "Masculinity" and "Potency" than the cat, as measured by both these factors and the "violent-gentle," "large-small," "heavy-light," and "hard-soft" scales comprising them. Male Ss also see the dog as higher in "Potency" than the cat, as measured by the "large-small" and "hard-soft" scales, but do *not* perceive any difference in "Masculinity." However, on the one scale most directly assessing Blacky's perceived sex, "masculine-feminine," female Ss do not evaluate the cat differently from the dog, and all Ss tend to see Blacky, regardless of species, as significantly "masculine."

Male Ss also see Blacky the Cat as higher in "Activity" (and higher on most scales comprising this factor) than Blacky the Dog. Sex differences, within species being rated, appear to be confined almost entirely to those scales and factors assessing Blacky's perceived sex, although males also tend to see the cat as "hotter" than females do.

The results of multiple-range *t* tests, comparing all 32 relevant pairings of the 16 Ss x treatments cells on the 4 SD factors and on the "masculine-feminine" scale are shown in Table 2.

Since each rating following those of Blacky on the first administration may be contaminated, to an unknown extent, by the effects of prior ratings, absolute levels of mean scores may be misleading here: consequently Table 2 presents only significant differences.

This table suggests that all the findings of Table 1, relating to differences in the way female Ss perceive Blacky the Cat and Blacky the Dog, remain constant after they have viewed the full series of cartoons. In addition, the tendency of male Ss to see Blacky the Cat as higher in "Activity" than Blacky the Dog appears to be a result of their tendency to see cats generally as more active than dogs, since the same differences are found when these Ss are rating Mama. No such comparable tendency exists in the case of female Ss rating Blacky for "Masculinity"; indeed, the reverse is the case, as on the second administration, Mama Cat is seen signifi-

cantly *higher* in "Masculinity" than Mama Dog by these Ss. A similar finding characterizes both male and female Ss' ratings of "Potency": regardless of how many cartoons they have seen, all Ss rate Blacky the Cat as significantly *lower* in "Potency" than Blacky the Dog, while rating Mama Cat as significantly *higher* in "Potency" than Mama Dog.

Sex differences appear to be minimal throughout, other than those already noted. Female Ss "Evaluation" of Mama, regardless of species or number of cartoons seen, generally tends to be higher than that of males. When they have seen all 12 cartoons, females tend to rate cats as more "masculine" than males do.

The two administrations, on the other hand, appear to lead to extensive differences. Blacky, regardless of species or of sex of rater, is perceived as significantly lower in "Masculinity" (and less "masculine"), higher in "Evaluation," and lower in "Potency," after viewing only two cartoons than after viewing the entire series. For Mama, such differences can be found only on the "Activity" and, to a lesser extent, the "Potency" factors (opposite in tendency, on the latter, to those characterizing Blacky.) Since few of these differences, in the case of Mama, exceed the .01 level, it would appear that Ss' judgments of Mama remain relatively stable throughout the test series, while those of Blacky tend to change as more information is given.

The question of whether Ss are in fact rating Blacky and Mama (rather than "catness" or "dogness") appears to be adequately answered by the Blacky-Mama comparisons. Regardless of sex of rater, species, or number of cartoons seen, Blacky is perceived as significantly different from Mama in almost all respects. One of the few exceptions to this generalization, however, comes in the case of female Ss rating cats on their first exposure to these stimuli: here Blacky does *not* differ from Mama in "Masculinity."

Approaching the question of female Ss identification of Blacky the Dog and Blacky the Cat from a different angle, it may be assumed that most Ss consider Mama to be quite feminine: indeed, no group assigned her a mean rating higher

Table 2
Significant Differences for Sex of Rater,
Species, Object, and Administration, on SD Factors and *m-f* scale
(Duncan Multiple-Range *t*'s)

Factor or Scale					
Cells	Masculinity	Evaluation	Potency	Activity	mas.-fem.
1 - B - F 1 - B - M1	C<D*		C<D* C<D*	C>D*	
1 - Mm - F 1 - Mm - M1	C>D		C>D* C>D	C>D	
2 - B - F 2 - B - M1 2 - Mm - F 2 - Mm - M1	C<D* C<D* C>D* C>D*	C>D* C>D*	C<D* C<D* C>D* C>D	C>D C>D* C>D* C>D*	C<D*
1 - B - C 1 - B - D	F>M		F<M*		F>M* F>M
1 - Mm - C 1 - Mm - D		F>M* F>M*			
2 - B - C 2 - B - D 2 - Mm - C 2 - Mm - D		F>M*		F<M*	F>M* F>M
B - C - F B - C - M1 B - D - F B - D M1 Mm - C - F Mm - C - M1 Mm - D - F Mm - D - M1	1<2* 1<2* 1<2* 1<2* 1>2*	1>2* 1>2* 1>2* 1>2*	1<2* 1<2* 1<2* 1<2* 1>2 1>2 1>2*	1<2* 1<2 1<2 1<2 1<2	1<2* 1<2* 1<2* 1<2*
1 - F - C 1 - F - D 1 - M1 - C 1 - M1 - D 2 - F - C 2 - F - D 2 - M1 - C 2 - M1 - D	B>M* B>M B>M* B>M* B>M* B>M* B>M* B>M*	B<M* B<M* B<M B<M* B<M* B<M* B<M* B<M*	B<M* B<M* B<M* B<M* B<M* B<M* B<M* B<M*	B>M* B>M* B>M* B>M* B>M* B>M* B>M* B>M*	B>M* B>M* B>M* B>M* B>M* B>M* B>M* B>M*

All entries significant at least at $p < .05$

* $p < .01$

Code:

1 - rating made after seeing only first two cartoons 2 - rating made after seeing entire series B - Blacky D - Dog M1 - Male
Mm - Mama C - Cat F - Female

"Cells" column on the left itemizes the shared properties of the two cells on which the comparison tabled in that row is made.

than 1.48 on the "masculine-feminine" scale in any condition, and for female Ss rating Mama Cat on their first exposure, the mean was 1.06 (i.e., at least 75 out of 80 Ss gave her the most extreme feminine rating). Consequently, the overall pattern of correlations of Ss' ratings of Blacky with their ratings of Mama, regardless of their specific content, ought to provide a measure of the extent to which Blacky is being evaluated in the same *manner* as Mama, or, again, the extent to which Blacky is being evaluated in the same manner as a prototypical female is. These correlations, along with those assessing the stability of Ss judgments of Blacky and Mama (the correlation between first and second administration) are given for all four groups and each SD scale, in Table 3.

The correlations of Ss' two judgments of Blacky with each other, as well as those of their two judgments of Mama with each other, suggest again that all Ss' judgments of Blacky are less stable than those of Mama, and that generally the judgments of Ss rating dogs are less stable than those of Ss rating cats. For both Blacky and Mama, however, the greatest stability is achieved in the case of female Ss rating cats.

With reference to the Blacky-Mama comparisons, all four groups show about equal agreement or disagreement in the correlation of their ratings of Blacky with those of Mama on the first administration. For males viewing dogs, 6 of these correlations are significantly positive; for females viewing dogs, 8; for males viewing cats, 5; and for females viewing cats, 5 are significantly positive, while 2 are significantly negative. Predictably, the majority of these significant correlations (22 out of 26) occur in the "Activity" and "Evaluation" factors, suggesting that in making non-sex judgments of these stimuli, Ss are, on the first administration, applying their judgmental standards in a reasonably consistent manner.

After Ss have seen all twelve cartoons, however, this picture changes drastically: for males viewing dogs, none of the correlations are significantly positive, 4 negative; for females viewing dogs, 0 and 3; for males viewing cats, 2 and 1; while for

females viewing cats, fully 7 correlations are significantly positive and only 1 ("masculine-feminine") negative. Furthermore, transformation of these r 's to Fisher's z 's indicates that in this last sample 6 of these significant correlations (all save "hot" and "masculine") are significantly greater than the comparable correlations for female Ss viewing dogs. Although these numbers cannot be tested for significance, it is clear that only female Ss viewing cats judge Blacky in a manner at all similar to the way in which they judge Mama.

Discussion

When evaluated in light of the two criteria proposed for an alternate form of the Blacky test, suitable primarily for female Ss, the above findings provide ample support for both requirements. Both in terms of mean differences between groups, and differing patterns of correlations across groups, female Ss appear to view Blacky the Cat as far lower in "Masculinity" and "Potency" than Blacky the Dog. Furthermore, the majority of these differences appear specific a) to female Ss, and b) to the character of Blacky.

In addition, there do not appear to be any major consistent differences between male and female Ss' evaluation of Blacky on the "Activity" and "Evaluation" dimensions, save that males see Blacky the Dog as higher in "Activity" than females do, after viewing the full series of cartoons (See Table 2) and that males see Blacky the Cat as "hotter" than females do after viewing the first two cartoons only (See Table 1). While it is possible that these two defects (as well as the tendency of male Ss to see cats generally as higher in "Activity" than dogs) could be corrected through the use of other stimulus figures, such as the pigs of the Patte Noir version of the Blacky (Corman, 1961), they do not appear sufficiently extensive to warrant this effort.

Thus, with respect to the criteria, the present cat form of the Blacky appears to be a useful alternative to the original stimuli for purposes of future research. In addition, in at least one respect (the greater stability of both male and female Ss evaluations of both Blacky and Mama)

the cat form may be superior to the original. This distinction appears to be outweighed, however, by the more extensive sex differences characterizing the cat form (See Table 1) which, although they are

restricted almost exclusively to the "Masculinity" and "Potency" factors, suggest that the original version of the test is seen (at least on Ss' first exposure) more nearly equally by male and female Ss than

Table 3
Correlations Between Various Administrations

Factor & Variable	Males - Dog				Females - Dog			
	B 1	Mm 1	B 1	B 2	B 1	Mm 1	B 1	B 2
	B 2	Mm 2	Mm 1	Mm 2	B 2	Mm 2	Mm 1	Mm 2
M masculine	26*	27*	-07	-25*	23*	56**	-17	-47**
M violent	-09	14	20	-57**	-13	36**	22*	-06
PM large	34**	51**	-21	-10	45**	51**	-00	-00
PM strong	18	23*	13	-04	14	23*	-14	01
P heavy	01	49**	-03	-13	16	26*	-09	-15
P hard	-03	39**	50**	-15	18	30**	44**	-10
A active	11	24*	03	-28**	10	11	-20	-26*
A fast	18	06	07S	-18	12	-13	05	-16
A sharp	28*	17	23*	-15	11	13	29**	-26*
A hot	-05	31**	39**	00	11	55**	67**	06
E good	-08	49**	32**	-16	06	31**	41**	-06
E happy	11	16	28*	-06	-01	17	33**	-09
E wise	03	27*	22*	-05	-02	30**	28**	00
E kind	14	43**	10	-26*	02	21	32**	06

Factor & Variable	Males - Cat				Females - Cat			
	B 1	Mm 1	B 1	B 2	B 1	Mm 1	B 1	B 2
	B 2	Mm 2	Mm 1	Mm 2	B 2	Mm 2	Mm 1	Mm 2
M masculine	45**	39**	-21	-39**	29**	38**	-03	-27*
M violent	40**	37**	34**	00	27*	29**	07	07
PM large	27*	56**	-02	04	56**	33**	04	16
PM strong	06	32**	00	00	27*	59**	-10	15
P heavy	40**	34**	-04	-06	31**	41**	20	-09
P hard	28*	52**	15	13	59**	46**	45**	23*
A active	17	07	-06	-17	18	31**	-26*	25*
A fast	12	24*	01	-14	26*	29**	-39**	34**
A sharp	20	08	32**	39**	13	44**	27*	43**
A hot	31**	24*	46**	44**	49**	47**	46**	28*
E good	03	52**	28*	02	40**	39**	41**	30**
E happy	39**	30**	17	16	-11	27*	33**	02
E wise	15	48**	15	07	40**	50**	10	33**
E kind	41**	49**	28*	11	50**	42**	20	13

Note: decimals omitted

* $p < .05$

** $p < .01$

the car form. Further, Robinson and Hendrix's (1966) factor analysis of Blum's original standardization data suggests that the Blacky Test as currently constituted is quite suitable for both male and female Ss. Thus, there would not appear to be any need for a new form of the test at this time, for any other than specific research purposes.

The failure of female Ss to differentiate between Blacky the Cat and Blacky the Dog on the one scale specifically seeking sex identification, "masculine-feminine," appears to pose a more serious problem. Not only are the mean scores of both female groups identical on this scale (5.40), but they are also significantly different from neutrality and significantly more "masculine" than those of the male groups (See Table 1). These findings, while quite consistent with all previous studies of the sexual connotations of the name or character of Blacky, cat or dog (Wolfson and Wolff, 1956; Dean, 1959; Rossi and Solomon, 1961; King and King, 1964; and Robinson and Hendrix, 1966) are markedly different from those concerning all other measures of sex identification used in the present study. The simplest explanation of this discrepancy would be one that suggests that these scales assess different levels of personality or of the identification process. It may be that on the direct, overt level sociocultural stereotypes of the sort suggested by King and King (1964) and Robinson and Hendrix (1966) may lead Ss to ascribe "masculinity" to any ambiguously-gendered object for which they are asked to make a sex rating. More covert items such as the "large-small" or "strong-weak" scales, while still reliably correlated with "masculine-feminine" for most concepts, would then not be as strongly affected by this particular stereotype, and could thus provide a "purer" measure of identification.

It should be noted, however, that while this explanation appears reasonable, it cannot account for the tendency of female Ss to see Blacky as more "masculine" than male Ss do. Indeed, in the case of male Ss both this stereotype and "normal" identification should cooperate to produce a markedly "masculine" response, while in the case of female Ss,

stereotype and identification would appear to be in conflict. By arbitrarily assigning the stereotype greater force than the identification, it is possible to explain female Ss' consistent tendency to identify Blacky as masculine, but *only* at the cost of the additional prediction that male Ss' responses should be even more masculine than females. Since both the present data and those of King and King (1964) suggest that, if anything, the opposite occurs, the stereotype explanation cannot be accepted without qualification.

REFERENCES

- Blum, G. S. A study of the psychoanalytic theory of psychosexual development. *Genetic Psychological Monograph*, 1949, 39, 3-99.
- Corman, L. *Le test PN: Patte Noire*, Paris, France: Presses Universitaires France, 1961.
- Dean, S. I. A note on female Blacky protocols. *Journal of Projective Techniques*, 1959, 23, 417.
- King, F. W., & King, D. C. The projective assessment of the female's sexual identification with special reference to the Blacky Pictures. *Journal of Projective Techniques*, 1964, 28, 293-299.
- Neuman, G. C., & Salvatore, J. C. The Blacky Test and psychoanalytic theory: a factor-analytic approach to validity. *Journal of Projective Techniques*, 1958, 22, 427-431.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. *The measurement of meaning*. Urbana, Ill.: Univ. of Illinois Press, 1957.
- Robinson, S. A. The development of a female form of the Blacky pictures. *Journal of Projective Techniques and Personality Assessment*, 1968, 32, 74-80.
- Robinson, S. A., & Hendrix, V. L. The Blacky Test and psychoanalytic theory: another factor-analytic approach to validity. *Journal of Projective Techniques and Personality Assessment*, 1966, 30, 597-603.
- Rossi, A. M., & Solomon, P. A. A further note on female Blacky protocols. *Journal of Projective Techniques*, 1961, 25, 339-340.
- Stricker, G. Stimulus properties of the Blacky Pictures. *Journal of Projective Techniques*, 1963, 27, 244-247.
- Wolfson, W., & Wolff, F. Sexual connotations of the name Blacky. *Journal of Projective Techniques*, 1956, 20, 347.

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Addenda to an Annotated Bibliography of the Blacky Test (1949-1967)

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Introduction

The annotated and indexed bibliography of the Blacky Pictures Test prepared by Taulbee and Stenmark (1968) is indeed "invaluable in clinical practice and research." However, to be of maximum value, such a bibliography should be not only extensive, but also exhaustive; although this latter requirement appears practically impossible to meet. It is in the hopes of drawing this bibliography a little closer to this goal that a list of addenda to Taulbee and Stenmark has been prepared; although it is still doubtful that these additions will serve to make the bibliography *fully* comprehensive.

Entries below are of two kinds: new listings not included in Taulbee and Stenmark, and annotations for several listings not further described in Taulbee and Stenmark. Where possible, the annotations have been taken from Psychological Abstracts (as Taulbee and Stenmark did) and these are identified by reference to that journal at the end of the commentary. All other abstracts were prepared by the present writer with an attempt made to use the author's own summary where feasible. The numbering of the entries is designed to conform with that of Taulbee and Stenmark, with suffixes (A or B) used for all new entries.

3A. Beck, S. J. Review of *The Blacky Pictures*. *Journal of Consulting Psychology*, 1956, 20, 487-488.

"The test has...a differentiating potency, and without a doubt it has the projective instrument value of opening a window to latent character traits. At the same time results are suspect...by reason of a major fallacy in the technique of treating the data. This consists in the method of "scoring" each story [such that] scorings must be a function of each scorer. ...Projective test investigations will need to find

some method of keeping the examiner factor constant..."

6. Berger, L. Interrelationship between blood pressure responses to mecholyl and personality variables. *Psychophysiology*, 1964, 1, 115-118.

"This study was designed to investigate the interrelationships between personality variables measured by both the Blacky Pictures and the Defense Preference Inquiry, and epinephrine-like and norepinephrine-like blood pressure reactions to intramuscular Mecholyl.

"Thirty...acute psychiatric patients were used as subjects...Phi coefficients were computed between the two blood pressure categories and the twenty-two personality dimensions.

"A norepinephrine-like [reaction] was associated with a rather primitive and infantile personality constellation, characterized by a tendency to utilize regression and projection...The epinephrine-like [reaction] was related to a strong attachment to mother, a lesser tendency toward regression, and the utilization of reaction formation."

15. Blum, G. S. A reply to Seward's "Psychoanalysis, deductive methods, and the Blacky Test." *Journal of Abnormal and Social Psychology*, 1950, 45, 536-537.

In the opinion of the writer, Seward's results tend to confirm the original research. He objects to Seward's statement that psychoanalysis is built upon too shaky a structure for scientific investigation, and states that the present evidence does indicate that the theory holds promise for scientific exploration. (*Psychol. Abstr.*, 1951, 25, No. 644.)

26. Blum, G. S. Programming people to simulate machines. In Tomkins and

Messick (Eds.) *Computer simulation of personality*. New York: John Wiley and Sons, Incorporated, 1963, pp. 127-158.

A conference (ETS, 1962) report on research described in *A Model of the Mind* (ref. No. 24), focusing on problems of anxiety, general inhibition, and arousal. Hypnosis, dream reports, and the Blacky Pictures, are among the techniques used: e.g., under hypnosis, "the subject is told that he and Blacky are one and the same, Blacky's feelings are his feelings." The emphasis throughout is on methodology, rather than verifications of psychoanalytic theory.

- 27A. Blum, G. S. *Psychodynamics: The science of unconscious mental forces*. Belmont, California: The Wadsworth Publishing Company, Inc., 1966.

"This small volume has sought to define and treat the content of psychodynamics in such a way as to bring it more into the mainstream of the academic discipline of psychology. In Chapter 1, unconscious mental forces were outlined and then traced in their effects through the developmental stages from infancy to adulthood... Chapter 2 concentrated on the topic of anxiety and its unconsciously produced reactions... [including] the series of defense mechanisms as well as a variety of other behavioral responses. Finally, in Chapter 3, unconscious influences were related directly to the major concerns of psychology—perceiving, thinking, and acting..."

"Research illustrations attesting to the verifiability of psychodynamic assertions were interspersed throughout...e.g., controlled observations, ratings, and experimental situations; modified projective techniques like the Blacky Pictures; and hypnotically controlled laboratory studies."

- 35A. Cava, Esther L. & Rausch, H. L. Identification and the adolescent boy's perception of his father. *Journal of abnormal and social Psychology*, 1952, 47, 855-856.

"This paper reports a study of the re-

lationship between conflict in identification with like-sex parent, as measured by a projective technique, and perceived communality of interests, activities, and traits." (*Psychol. Abstr.*, 1953, 27, No. 5020)

The Oed. Int., Cast. Anx., Ident., and Ego Ideal dimensions of the Blacky were used, with Ss (37 twelfth-grade boys) scored strong or weak on each dimension and assigned a Total Identification score. Perceived similarity to father was assessed by comparing the Ss own responses on the Strong VIB to those they guessed their fathers would make. "Boys who showed less conflict in each of the dimensions relating to identification on the Blacky tended to perceive their fathers as more like themselves." For Cast. Anx. and Total Ident. the differences were significant at .01 and .03, respectively; for Oed. Int. and Ident. they approached significance (.06 and .08, respectively). The correlation of Total Identification with perceived similarity was $-.36$ ($p < .05$).

- 36A. Charen, S. Regressive behavior changes in the tuberculous patient. *Journal of Psychology*, 1956, 41, 273-289.

It has been suggested that tuberculous patients regress in personality in several ways due to enforced bedrest and hospitalization, with deprivation of normal social activities. An attempt is made to measure these changes, by means of pencil-and-paper tests, the Rorschach, and the Blacky test. However, in none of the tests was there evidence of regression of personality structure. The patients apparently accepted hospital conditions of bedrest, dependency, reliance upon others, and social frustration, with patterns of behavior which are adult and not child-like. (*Psychol. Abstr.*, 1957, 31, NO. 5000)

- 48A. De Luca, J. N. Performance of overt male homosexuals and controls on the Blacky test. *Journal of Clinical Psychology*, 1967, 23, 497.

20 homosexuals and 40 nonhomosexuals were administered the Blacky test. Homosexuals showed significantly greater dis-

turbance on only 1 of 30 factors measured. It is concluded that the Blacky test does not differentiate overt male homosexuals from nonhomosexuals. (*Psychol. Abstr.*, 1968, 42, No. 2697)

48B. Dickson, S. An application of the Blacky Test to a study of the psychosexual development of stutterers. Masters thesis, Brooklyn College, 1954.

50A. Ellis, A. Review of *The Blacky Pictures*. In O. K. Buros (Ed.), *The Fourth Mental Measurements Yearbook*. New Brunswick, N. J.; Rutgers University Press, 1953. pp. 166-167.

"The writer's experience with the *Blacky Pictures* has thus far indicated the following shortcomings of the test: a) Some of the cartoons are not clear, and may easily confuse many subjects.

"b) The practice of giving the test Inquiry...after each card...invites biased responses to all but the first cartoon.

"c) The multiple choice questions in the Inquiry are often transparent...

"d) The test seems to be more adaptable for use with children and with unsophisticated adults...

"e) The manual encourages psychologists first to interpret the test with a minimum of background information...this may easily lead to dangerous diagnostic practices.

"f) ...reliability and validity studies in connection with the *Blacky Pictures* are at present virtually nonexistent..."

55A. Genn, M. M. Review of *The Blacky Test*. *Quarterly Journal of Child Behavior*, 1950, 2, 474-476.

"The test has not been tried out on children. Although it seems likely that the test is appropriate for children, it still remains to be seen whether children's productions will lend themselves to the same levels of interpretation, as those set up for adults...the validity of the *Blacky Test* has been established to some extent. However, the reliability, or the extent to which a protocol is actually representative of the subject's psychosexual development,

has not as yet been demonstrated. This problem, however, exists in relation to all projective tests."

64A. Hogan, Virginia. The reliability of the Blacky Pictures with institutionalized senile psychotics. Doctoral dissertation, Western Reserve University, 1954.

69A. Kalish, H. I. The black box revisited. *Contemporary Psychology*, 1963, 8, 24-26.

A review of Blum's *A Model of the Mind* (Ref. No. 24). "In its present form it is difficult to judge the utility of the conceptual system. Blum has attempted to maintain a parsimonious and consistent internal structure and, in certain instances, appears to have generated testable deductions. But since the success of a model in psychology is directly proportional to the amount of effort psychologists are willing to expend in its behalf, the future of Blum's conceptual system will depend partly on the author's tenacity and, more importantly, on its general acceptance. This particular model offers most psychologists very little more in terms of comprehensiveness than do most models in psychology and a good deal less in terms of precise functional relationships."

70A. Klehr, H. An investigation of some personality factors in women with rheumatoid arthritis. *American Psychologist*, 1952, 7, 344-345.

Three hypotheses were investigated: "a) that all female rheumatoid arthritics have chronic inhibited aggressive feelings [particularly of an oral nature] which are defended against by b) a masculine protest reaction...and c) the assumption of a masochistic role emphasizing service or duty to others." The subjects, all female, were 20 outpatient arthritics, 20 outpatients without muscle or bone involvement, and 20 normals. The TAT, Allport-Vernon, and Blacky were used. "There were no statistically significant differences among the three groups on any of the measures employed except for greater oral aggression for arthritics on one of the Blacky Test measures."

70B. Knapp, R. H. Demographic cultural and personality attributes of scientists. In C. W. Taylor (Ed.) *The 1955 University of Utah Research Conference on the Identification of Creative Scientific Talent*. Salt Lake City: University of Utah Press, 1956, pp. 204-212.

"Students in the sciences, the social sciences, and the humanities, at Wesleyan University...were administered...a group Rorschach, the Blacky Test, and the TAT...On the Blacky Test, the science students were almost universally the least disturbed on all variables. Three possible interpretations are offered: (a) that the science students actually are less disturbed in these areas; (b) that the test dealing with an animal invited 'scientific dispassion'; or (c) that scientists may be disposed to deal with affect by repression rather than projection." [On the TAT] "science students showed...marked tendency to repressive and evasive solutions...interpreted as indicating that the scientist is...disposed to employ repression and isolation in coping with affect arising from human exchange." (Stein, M. I. & Heinze, Shirley J., *Creativity and the individual*, Glencoe, Ill.: The Free Press, 1960, p. 273.)

(Note: this research is also summarized in Teevan - Ref. No. 121.)

80A. Merchant, Frances C. Psychosexual development in stutterers. *Journal of Consulting Psychology*, in press.

(This reference appears, as given, in Blum and Hunt—ref. No. 28—and again in Beck—ref. No. 3A. It seems to have appeared in print, however, under the name of Carp—ref. No. 35—in the *Journal of Projective Techniques*, 1962.)

84. Nelson, S. Psychosexual conflicts and defenses in visual perception. *Journal of Abnormal and Social Psychology*, 1955, 51, 427-433.

Tachistoscopically presented stimulus material (Blacky pictures) is used to study perceptual defense and vigilance in persons with different psychosexual conflict dimensions and ego-defense preferences. It is hypothesized that when stimulus

material is presented below the threshold of conscious recognition, perceptually vigilant behavior will be evoked under conditions where ego-defense mechanisms are not likely to operate, and perceptually defensive behavior will be evoked where ego defenses are likely to operate. The vigilance and defense hypotheses are confirmed by the results. (*Psychol. Abstr.* 1957, 31, No. 2280.)

85A. Newton, K. R. Review of *The Blacky Pictures*. In O. K. Buros (Ed.) *The Fifth Mental Measurements Yearbook*. New Brunswick, N. J.: Rutgers University Press, 1959, pp. 214-216.

"The author's description of the Blacky test as being a 'modified projective technique' is a rather generous view of projective techniques. The cartoons themselves, the instructions involved in presenting them, and the inquiry that follows are somewhat obvious and almost directive in nature. In an attempt to obtain material on the various areas of psychosexual development, the author has structured his pictures and inquiries in such a way as to make the responses fit the theory. ...At this time, this technique would appear to be of little value to the practicing clinician..."

88. Noblin, C. D. & Timmons, E. O. Verbal behavior of orals and anals: Effects of schedules of reinforcement. *American Psychologist*, 1964, 19, 553.

"This study is an extension of attempts to utilize operant verbal-conditioning techniques for exploring psychoanalytic concepts. The compulsive approach to problem solving ascribed to anal characters by Freudian theory suggests that these individuals might have more difficulty than orals with an unstructured learning task. It was predicted that anals acquire a conditioned verbal response more effectively under a rigid fixed-ratio schedule than under the less structured variable-ratio schedule. Orals were expected to perform better than anals under the VR schedules. Both hypotheses were supported."

100A. Robinson, Sandra A., & Hendrix,

V. L. The Blacky test and psychoanalytic theory: Another factor-analytic approach to validity. *Journal of Projective Techniques & Personality assessment*, 1966, 30, 597-603.

Blum's original tetrachoric correlation matrices for 13 Blacky dimensions (ref. No. 13) were subjected to principal component analysis and the resulting factors rotated using Kaiser's varimax criterion, a technique not generally available when Neuman and Salvatore (ref. No. 85) factor analyzed Blum's data. For the males the results were similar to those of Neuman and Salvatore. However, a separate factor of Guilt Feelings was found in this study. Four levels of psychosexual development (oral, anal, phallic and genital) were found for females. These levels were relatively free of the contradictions discussed by Neuman and Salvatore, suggesting that psychoanalytic theory and the Blacky may be more congruent with female psychosexual development than was thought in the past. (*Psychological Abstract*, 1967, 41, No. 2922.)

100B. Rosen, E. Review of *The Blacky Pictures*. *Journal of Projective Techniques*, 1951, 15, 109-111.

"Although projective techniques stem indirectly from psychoanalytic theory, the majority of them are not closely tied to psychoanalytic or to any other definite personality formulation. Usually one does not find a clear statement of either the theoretical concepts which have guided the construction of the test or of the conceptual system to be used as an aid in test interpretation. The Blacky Pictures are unique in attempting to evaluate the subject's status in terms of a number of specified psychoanalytic variables. ...The evidence for the validity of the technique is avowedly incomplete...but it contrasts with the lack of objective validity evidence of any type in the case of a number of other projective techniques. [The test] promises to contribute to future clarification of systematic problems of personality and to take its place as a welcome addition to practical clinical instruments."

104A. Shaffer, L. F. Review of *The Blacky Test*. *Journal of Consulting Psychology*, 1950, 14, 332-333.

"Although the manual and the research monograph...suggest the purposes and uses of the test, no attempt is made to provide full training for its interpretation. The author wisely suggests that it be used only by clinical psychologists with general competence in other projective tests and with a broad knowledge of psychoanalytic theory."

112A. Smith, W. & Powell, Elizabeth K. Responses to projective material by pre- and post-menarcheal subjects. *Perceptual and Motor Skills*, 1956, 6, 155-158.

Four cards from the Blacky Pictures were administered to 138 female Ss, 67 of whom were premenarcheal. The groups differed in their responses on 6 of the 19 questions concerned with the meaning of this ambiguous stimulus material. The differences were interpreted as indicating that the menarcheal state influences perceptual behavior in situations of this type. (*Psychol. Abstr.*, 1957, 31, No. 4715.)

113A. Smock, C. D. & Thompson, G. G. An inferred relationship between early childhood conflicts and anxiety responses in adult life. *Journal of Personality*, 1954, 23, 88-98.

"Selected Blacky Pictures were utilized to differentiate a group of Ss into Hi and Lo anxiety-intensity groups. The same Ss were then given a modified word-association test designed to represent, in a symbolic way, the same areas of psychosexual conflicts. The relationship between these two relatively independent approaches, both of which were designed to measure the effects of these early conflicts through anxiety intensity, was found to be statistically significant at a high level of confidence."

125A. Trent, R. D. & Amchin, A. An exploration of the relationships between manifest anxiety and selected psychosexual areas. *Journal of Projective Techniques*, 1957, 21, 318-322.

The Children's Manifest Anxiety Scale and the Blacky Pictures were administered to 57 white, Negro, and Puerto Rican boys (12-16) in a state training school. Results: "There were no significant differences in psychosexual problems" between the 3 groups. "The two most frequent areas of psychosexual problems for all the Ss were masturbation guilt and anacletic love objects. ...Positive identification and sibling rivalry were most infrequent. ...Subjects who scored fairly strong or very strong for the areas of oral eroticism, ego ideal, and narcissistic love object were significantly more anxious than those Ss who scored weak or absent for these three dimensions..." For oral sadism, this re-

lationship was reversed; and there were no significant differences in this relationship for the other nine scales. "Freedom from psychosexual conflicts...was not significantly related to manifest anxiety."

REFERENCES

- Taulbee, E. S. & Stenmark, D. E. The Blacky Pictures Test: a comprehensive annotated and indexed bibliography (1949-1967). *Journal of Projective Techniques and Personality Assessment*, 1968, 32, 105-137.

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Structural Changes of the Color Variable in the Holtzman Inkblot Technique¹

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Summary: By using data on 323 children provided from a larger study employing an overlapping longitudinal design, the present study investigated developmental trends for the Color variable of the Holtzman Inkblot Technique, as well as for the elements of this score. In general, the developmental trends for Color and its elements were in agreement with previous longitudinal studies using Rorschach color scores. Even though the observed developmental trends were not increasingly monotonic, color appeared to be more effectively integrated with form as the Ss increased in chronological age.

Psychologists, viewing color phenomenologically, are interested in color as a subjective experience. Few clinical psychologists who view color as reflecting an affective process disagree with the essentials of Rorschach's (1942) original formulation of the color response made almost 50 years ago. For example, responses to inkblots where color is used as a primary determinant with no form present (*C*), and responses where color is used as a primary determinant but with some form suggested (*CF*) were believed to express affective lability, impulsiveness, or the more egocentric affective states. On the other hand, stable emotions or the socialized control of emotional expression were thought to be reflected in the number of responses where color is not used or is used only in a secondary fashion (the *FC* response). Even though many Rorschach workers are convinced that a link exists between affect and color, few formal explanations have been attempted; and those that have been given are not in agreement. (Birren, 1941; Goldstein, 1942; Rickers-Ovsiankina, 1943; Schachtel, 1966.)

Research on color responses to projective tests, principally the Rorschach, has

produced rather consistent results regarding the ontogenesis of the color response: among young children, pure color responses (*C*) dominate; in older children, *CF* responses dominate while *C* responses drop off rapidly; and at a later stage of childhood, through adolescence, and into adulthood, *FC* responses are dominant (Klopfer & Marguiles, 1941; Ford, 1946; Ames, Learned, Metraux, & Walker, 1952; Ames, 1966; Halpern, 1953; Ledwith, 1959). As indicated by these studies, color develops from a position as an immediate experience dominating the percept to one where it is more effectively integrated with form.

Data from studies using a newer, psychometrically-sound projective test, the Holtzman Inkblot Technique (HIT), have shown highly significant age differences for Color, a HIT variable similar to Sum *C* on the Rorschach² (Thorpe & Swartz, 1965, 1966; Swartz, Lara Tapia, & Thorpe, 1967; Tamm, 1967). While these several HIT studies have shown age differences for Color, no study has been reported which partitioned Color into its basic elements (the scoring weights of 0, 1, 2, and 3, which are roughly equivalent to *F*, *FC*, *CF*, and *C*, respectively). Nor has there been any investigation of the changes in these elements as a function of age.

The HIT consists of two parallel forms, A and B, each containing 45 inkblots to which the subject gives only one response per card (Holtzman, Thorpe, Swartz, & Herron, 1961). At the present time 22 variables are scored for each response. Color, one of the key variables on the HIT, is scored as a determinant of a

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² The relation of the HIT summary score for Color to the Sum *C* score of Klopfer, Ainsworth, Klopfer, & Holt (1954), which is used to determine various quantitative relationships between variables, is quite simple and can be expressed as follows: Since Sum *C* = $1/2 FC + 1CF + 1 1/2 C$, then Total HIT *C* = $2(\text{Sum } C)$.

response on a four-point scale as follows:

- 0 — color not used as a determinant
- 1 — color used in a secondary fashion as an elaboration of the percept (like *FC* in the Rorschach)
- 2 — color used in a primary fashion but with some form implied in the percept (like *CF* in the Rorschach)
- 3 — color used as a primary determinant but with no form present (like *C* in the Rorschach)

The total score for color is obtained by summing the individual inkblot scores across the 45 inkblots; the theoretical range of the total, or summary, score is from 0 to 135.

By employing data from a larger, cross-cultural study using an over-lapping longitudinal design (Holtzman, 1965; Holtzman, Diaz-Guerrero, Swartz, & Lara Tapia, 1968), the present study was undertaken to investigate the changes in the Color variable of the HIT and the elements of this score over an observed age span of 10 years.

Method

Subjects

The 323 Ss used in the present study were chosen from a larger sample of normal elementary and junior high school children participating in a longitudinal investigation of the developmental features of perceptual and cognitive functioning. The Ss were divided into three criterion age groups with initial ages of 6.7, 9.7, and 12.7 years. Group I consisted of 99 Ss: 50 males and 49 females; Group II consisted of Ss: 47 males and 59 females; Group III consisted of 118 Ss: 64 males and 54 females.

The two youngest age groups, Groups I and II, were sampled mainly from six different elementary schools in Austin, Texas. The Ss in Group III were sampled from the seventh grade of a single junior high school which acts as a recipient for most students from the six elementary schools.

With regard to intelligence, Ss in all three age groups fell within the normal to superior range, as measured by the Wechsler Intelligence Scale for Children.

The Ss in the present study represent a broad range of working-class, business, and professional families. Only white, English-speaking Ss were used. The entire sample probably can be characterized best as normal, middle-class, urban children from fairly stable families that represent the dominant values in American culture.

Procedure

Initially, Form A of the HIT was administered to Groups I and III, while the parallel form, Form B, was given to Group II. In three subsequent years of repeated testing, the three groups were alternately given either Form A or Form B on the anniversary date of their previous testing session. Consequently, the ages for all Ss in each group were held constant. Although all Ss were given a battery of other tests, the HIT was usually administered first. The experimental design with the one year of overlap among the three groups made it possible to study an age span of 10 years in just four years of testing.

Results and Discussion

For the observed age span of 10 years, several features of the total HIT Color score and the elements of this score were in agreement with longitudinal studies of the color response on the Rorschach.

A plot of mean Color score versus age is presented in Figure 1. Inspection of this figure shows a rather consistent decline in mean Color score for Group I, followed by nonmonotonic fluctuations in Groups II and III. The one year of overlap in age at time of testing between Groups I and II and between Groups II and III makes it possible to examine the effects of practice due to repeated testing. Since all three groups are drawn from the same general population, differing only in age at the time of initial testing, the fourth year of testing in Group I should yield a distribution of Color similar to that obtained from the initial testing of Group II, unless practice effects are present. A *t*-test of mean Colorscores for this one year of overlap revealed no significant difference between Groups I and II ($t=1.29$, $p>.10$). Apparently the decline in Color

for ages 6.7 to 9.7 in Group I is a genuine developmental trend rather than an artifact due to repeated measures per se.

The same method of analysis applied to the one year of overlap in Groups II and III revealed a highly significant mean difference ($t = 4.50, p < .001$) between the fourth year in Group II and the first year in Group III. The low mean Color

score of 8.9 for the twelve-year-olds in the fourth year of repeated testing for Group II suggests the presence of some artifact or practice effect. By contrast, the mean score of 14.3 for the first year of testing in Group III (also twelve-year-olds) is almost identical to the mean of 15.1 obtained in an earlier normative sample of 197 twelve-year-old children (Holtzman, et al., 1961, p. 116).

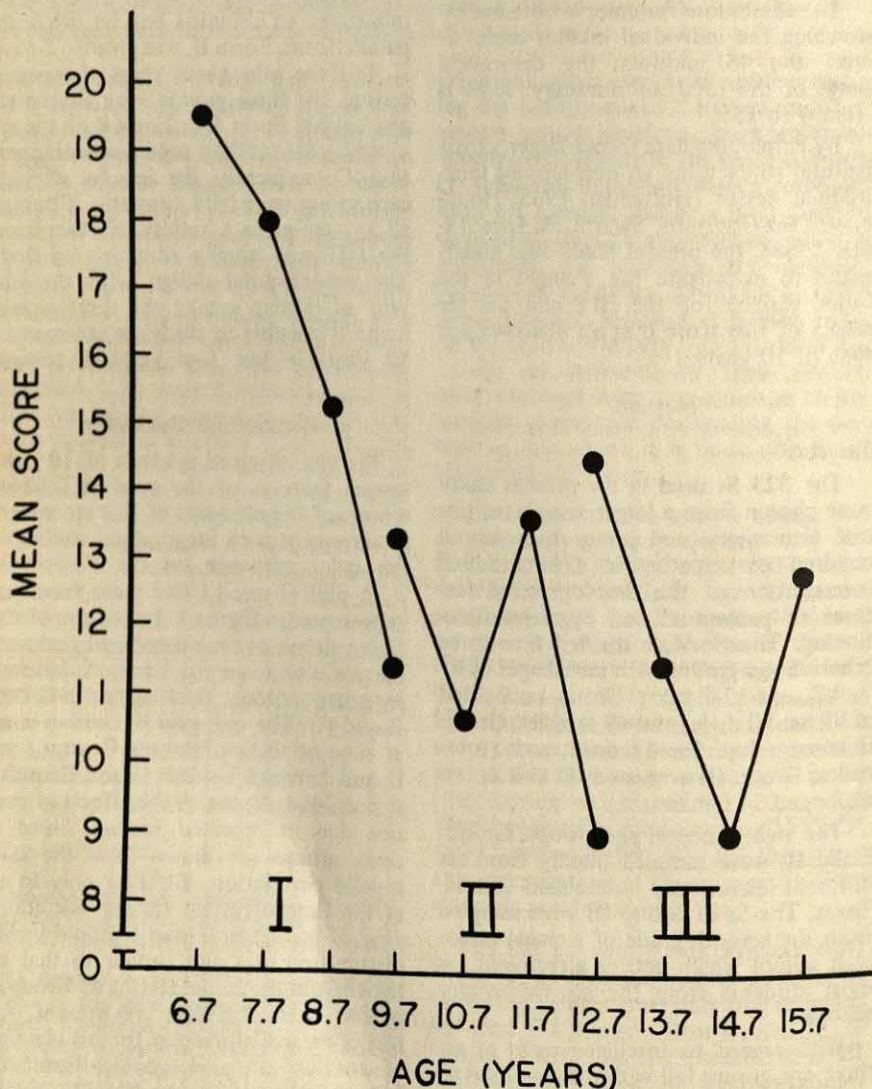


Figure 1. Mean HIT Color Scores for Three Criterion Age Groups over an Observed Age Span of 10 Years.

The meaning of such fluctuations due to repeated measures cannot be determined from the present data, although it is of interest to note that the fluctuations do occur. Completion of the larger longitudinal study with several years of overlap for each of the age groups and extensive intercorrelations with other concurrent data may provide more precise answers to questions such as this.

No significant sex differences for Color or its elements were found in any of the three age groups. Consequently, all subsequent analyses in the present study were made on pooled Ss in each age group. Means and standard deviations for Color, as well as for each of the elements of the Color score, are presented in Table 1.

The consistent decline in mean Color score for ages 6.7 to 9.7 in Group I is due largely to a decline in *C* and, to a lesser extent, a decline in *CF*. The mean number of pure color responses drops from a high of 3.6 in six-year-olds to only 1.7 in nine-year-olds, a trend which also characterizes the standard deviation of *C* in these early years. At no time thereafter in the developmental continuum does the

number of pure color responses rise above this low figure.

By contrast, form-dominated responses with color present (*FC*) remain fairly constant across the four years of repeated testing in Group I. On the other hand, Group II starts out fairly high on *FC* (although not significantly above the comparable nine-year-olds in the fourth year of Group I) and drops off steadily throughout the four years.

The presence of different developmental trends for the elements of Color suggests that they may be measuring different aspects of personality. A partial check on this possibility can be made by examining the intercorrelations of *F*, *FC*, *CF*, and *C*. The correlations among these four variables for the first year of testing are given separately for each group in Table 2.

With the exception of Group I, all three elements of Color are significantly and directly related to each other. While the strength of the relationship is not great—a correlation in the order of .30—the outcome is consistent and provides some justification for combining the three elements into a weighted total Color score

Table 1
Means and Standard Deviations for HIT Color and its Elements
by 3 Age Groups for 4 Years of Repeated Testing
(Sexes Combined)

Group	Year of Testing		Color		FC (1)		CF (2)		C (3)	
		Age	Mean	S. D.	Mean	S. D.	Mean	S. D.	Mean	S. D.
I (N = 99)	1	6.7	19.5	17.8	3.3	3.4	2.7	3.4	3.6	4.6
	2	7.7	18.0	13.4	3.6	3.6	2.7	2.6	3.0	3.1
	3	8.7	15.3	11.3	3.8	3.6	2.3	2.1	2.3	2.6
	4	9.7	11.5	10.5	3.2	2.9	1.6	1.8	1.7	2.5
II (N = 106)	1	9.7	13.4	9.1	5.9	4.2	1.5	1.5	1.5	1.9
	2	10.7	10.7	9.4	5.0	4.2	1.5	1.8	0.9	1.5
	3	11.7	13.5	10.6	4.6	4.0	1.9	2.1	1.7	1.9
	4	12.7	8.9	7.5	3.4	3.2	1.4	1.5	0.9	1.4
III (N = 118)	1	12.7	14.3	10.2	5.3	4.1	3.3	2.6	0.8	1.4
	2	13.7	11.6	9.6	2.9	3.1	2.4	2.4	1.3	1.5
	3	14.7	8.9	7.3	2.7	3.6	1.6	1.6	1.0	1.2
	4	15.7	12.3	7.9	4.3	3.7	2.2	1.8	1.2	1.4

Table 2
Intercorrelations of Elements in HIT Color Within the
Three Criterion Age Groups for Year 1

Response	Mean	S. D.	Response			
			<i>F</i>	<i>FC</i>	<i>CF</i>	
<i>F</i>	32.8	8.3				Group I (N = 99) HIT Form A
<i>FC</i>	3.3	3.4	-.02			
<i>CF</i>	2.7	3.4	-.16	-.03		
<i>C</i>	3.6	4.6	-.22*	-.09	.12	
<i>F</i>	34.3	6.2				Group II (N = 106) HIT Form B
<i>FC</i>	5.9	4.2	.00			
<i>CF</i>	1.5	1.5	-.25**	.32**		
<i>C</i>	1.5	1.9	-.37**	.22*	.31**	
<i>F</i>	34.3	6.3				Group III (N = 118) HIT Form A
<i>FC</i>	5.3	4.1	.01			
<i>CF</i>	3.3	2.6	.13	.33**		
<i>C</i>	0.8	1.4	.02	.28**	.33**	

* $p < .05$

** $p < .01$

Note: Intercorrelations for *F* are point-biserial correlations; all other intercorrelations are phi coefficients.

similar to Sum *C*. The lack of any significant intercorrelations among the elements for very young children suggests that the low-order internal consistency apparent for Color in older children does not emerge until sometime after the age of seven.

The occasional low-order negative correlation between *F* and either *CF* or *C* can be attributed largely to the fact that an individual's scores on *C*, *CF*, *FC*, *F*, and *R* (the number of cards rejected) must add up to 45, the total number of inkblots in either Form A or B of the HIT.

In conclusion, the major results of this study were threefold: 1) a steady developmental trend for mean Color scores in Group I, which may be attributed in large part to the marked decline in pure color responses at these ages; 2) minor fluctuations from year to year in mean Color scores for Groups II and III, which must be interpreted with caution, since the precise cause of these fluctuations is not known at this time; and 3) with the exception of Group I, the significant rela-

tionship of the three elements of the HIT Color variable with each other, which argues for combining them into a weighted total Color score similar to Sum *C* as scored on the Rorschach.

REFERENCES

- Ames, L. B., Learned, J., Metraux, R. W., & Walker, R. N. *Child Rorschach responses*. New York: Hoeber, 1952.
- Ames, L. B. Changes in Rorschach response throughout the human life span. *Genetic Psychology Monographs*, 1966, 74, 89-125.
- Birren, F. *The story of color*. Westport, Connecticut: Crimson Press, 1941.
- Ford, M. *The application of the Rorschach test to young children*. Minneapolis: University of Minnesota Press, 1946.
- Goldstein, K. Some experimental observations concerning the influence of color on the functions of the organism. *Occupational Therapy Rehabilitation*, 1942, 21, 147-151.
- Halpern, F. *A clinical approach to children's Rorschachs*. New York: Grune & Stratton, 1953.
- Holtzman, W. H. Cross-cultural research on personality development. *Human Development*, 1965, 8, 65-86.

- Holtzman, W. H., Diaz-Guerrero, R., Swartz, J. D., & Lara Tapia, L. Cross-cultural longitudinal research on child development: Studies of American and Mexican school children. In J. Hill (Ed.), *Minnesota Symposium on Child Psychology*. Vol. II. Minneapolis: University of Minnesota Press, 1968.
- Holtzman, W. H., Thorpe, J. S., Swartz, J. D., & Herron, E. W. *Inkblot perception and personality*. Austin: University of Texas Press, 1961.
- Klopfer, B., Ainsworth, M. D., Klopfer, W. G., & Holt, R. R. *Developments in the Rorschach technique*. Vol. I, Yonkers, N. Y.: World Book, 1954.
- Klopfer, B., & Margulies, H. A. Rorschach reactions in early childhood. *Rorschach Research Exchange*, 1941, 5, 1-23.
- Ledwith, N. H. *Rorschach responses of elementary school children: A normative study*. Pittsburgh: University of Pittsburgh Press, 1959.
- Rickers-Ovsiankina, M. Some theoretical considerations regarding the Rorschach method. *Rorschach Research Exchange*, 1943, 7, 41-53.
- Rorschach, H. (Trans. by P. Lemkau & B. Kronenburg) *Psychodiagnostics: A diagnostic test based on perception*. Berne: Hans Huber, 1942.
- Schachtel, E. G. *Experiential Foundations of Rorschach's test*. New York: Basic Books, 1966.
- Swartz, J. D., Lara Tapia, L., & Thorpe, J. S. Perceptual development of Mexican school children as measured by responses to the Holtzman Inkblot Technique. *Revista Interamericana de Psicología*, 1967, 1, 289-295.
- Tamm, M. Resultados preliminares de un estudio transcultural y desarrollo de la personalidad de niños mexicanos y norteamericanos. In C. F. Hereford & L. Natalicio (Eds.), *Aportaciones de la Psicología a la Investigación Transcultural*. Mexico 1, D. F.: Editorial F. Trillas, S. A., 1967. Pp. 159-164.
- Thorpe, J. S. & Swartz, J. D. Level of perceptual development as reflected in responses to the Holtzman Inkblot Technique. *Journal of Projective Techniques & Personality Assessment*, 1965, 29, 280-286.
- Thorpe, J. S. & Swartz, J. D. Perceptual organization: A developmental analysis by means of the Holtzman Inkblot Technique. *Journal of Projective Techniques & Personality Assessment*, 1966, 30, 447-451.
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Incongruence of Sentence Completions Under Time Pressure and Freedom

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Summary: A direct relationship is hypothesized between amount of ego-alien content elicited by SC tests and amount of time pressure imposed. This prediction, tested with female college Ss, was supported by: (a) the results of two independent groups, one taking the test under time pressure and the other under freedom; (b) the results of a single group which was given the test under pressure and later under freedom, and those of a control group for whom the test was repeated under identical pressure conditions. Measures of incongruence within a given personality were obtained by assessing the dissimilarity of completions elicited under pressure and freedom. Anxious Ss showed a greater degree of incongruence than non-anxious Ss.

This study is a continuation of previous research directed toward determining the extent to which the projective process is influenced by variation of the task attitude of the S toward time pressure. While the previous research dealt with the effects of such pressure upon the perception of ink blots (Siipola & Taylor, 1952) and upon word association (Siipola, Walker, & Kolb, 1955), the present study concerns the influence of time pressure upon the sentence completion (SC) method of personality assessment. Goldberg (1965, pp. 16-18) has recently summarized the effects of instructions and set upon sentence completion and underlined the need for further research on this problem.

This research was based upon the "levels hypothesis" (Hanfmann & Getzels, 1953; Stone & Dellis, 1960) which conceptualizes a given personality as composed of a continuum of levels of depth in psychic functioning, and upon the further proposition of Stone and Dellis (1960) that the deeper and less conscious the level of personality tapped by a given test, the more will the responses reflect conflictful aspects of the personality, such as ego-alien motives and non-self approved content. A direct relationship is hypothesized between the amount of ego-alien content elicited by the SC test and the amount of time pressure imposed upon S.

In Part I, the above hypothesis was tested by administering a SC test to two independent groups of college Ss under different instructional sets, extreme time pressure and complete freedom from such

pressure. It is predicted that under pressure a deeper, less consciously controlled process is activated resulting in more ego-alien, less self-approved content.

In Part II the possibility of developing a measure of the degree of incongruence between different levels of a given personality was explored. This involved testing anxious and non-anxious college Ss under *both* pressure and freedom, and then assessing the amount of dissimilarity in the sentence completions obtained under the two conditions. It is predicted that anxious Ss, in comparison to non-anxious Ss show a greater degree of incongruence in the material elicited under pressure and freedom, implying more inner conflict between different aspects of the personality. In Part III intra-individual variability upon repeat testing was investigated.

Part I: Effects of Time Pressure and Freedom upon Sentence Completion

In order to test the basic hypothesis that under time pressure, in comparison to freedom, more ego-alien content is elicited, the procedure of having two large, equated, independent groups take the same SC test under different conditions was used. Thus practice effects from one condition to the other were absent and could not confound the results.

Method

Subjects

All 186 freshmen and sophomores in an introductory psychology course at Smith College were given the SC test; they were divided at random into two groups, pressure (Group P) and free (Group F).

Instructions

Group P "This test consists of 80 partly completed sentences. Read each one and finish the sentence by writing the *very first thing that comes into your mind*. Work as quickly as you can since you are allowed only 10 minutes. This will be ample time for you to write the *very first thing* that comes to mind."

Group F "This test consists of 80 partly completed sentences. Read each one and finish the sentence. Work at your own pace since this is not a speed test. You can take as long as you wish."

Design of SC Test

An 80 item, relatively structured test was especially designed to direct the responses of *S* to the following sensitive areas: self picture and self goals, attitudes toward sex and aggression, dominant feelings, reactions to frustrations and conflict, and attitudes toward important interpersonal figures.

For experimental purposes two special features were introduced. First, 40 basic items were selected and the stem of each was presented in both the first and third person. It is generally assumed that first person stems are more likely to elicit ego-syntonic, defensive responses, while third person stems encourage more ego-alien content (Goldberg, 1965, p. 21).

Secondly, self-ratings on whether the *S* herself considered her completions ego-alien were obtained by following the procedure and directions used by Dorris, Levinson, and Hanfmann (1953, p. 100) for obtaining a self-reference score. After finishing the test, *S* was asked to reread each completion and to mark it with a + or a - depending upon whether or not she felt that the completed sentence applied to herself and reflected the way she personally feels and acts. One would expect the completions marked + (self responses) to occur with higher frequency under freedom and those marked - (non-self responses) with higher frequency under pressure.

Results

Reaction Time

Since the independent variable in this part of the research was the presence or absence of time pressure, *Ss* who failed to follow the instructions by either reacting too slowly under pressure, or too fast under freedom were excluded in the analysis of the data. Also excluded were all *Ss* who failed to complete the test by o-

mitting a large number of items. Thus the results of 36 *Ss* in the original sample of 186 were omitted, leaving a total sample of 149.

All of the data reported will be based upon the final sample (73 in Group P and 76 in Group F) which clearly followed the instructions. For this sample, the median time for Group P to complete the 80 items was 14 min. with a range of 13 (7-20) while that for Group F was 38 min. with a range of 46 (30-76). In general, *Ss* in Group P completed the test in almost one-third of the time taken by Group F.

Self Reference Score

The self reference score is a measure of the frequency with which *S* herself judges her sentence completions to be self-related (*S*) or non-self related (*NS*). Throughout, the results will be treated in terms of the frequency of completions judged as *NS*. Given the basic thesis of this research, one would expect completions rated as *NS* to occur more frequently under time pressure than under freedom. This prediction was upheld by the data shown in Table 1. For the total test of 80 items, the difference between the two groups in *NS* completions was significant at less than .001 level of confidence. Clearly, time pressure facilitated completions which to *S* were ego-alien in the sense of not seeming to be related to herself.

Table 1 also includes a comparison of the frequencies of *NS* ratings for first and third person stems. As expected, both types of stems induced significantly more *NS* responses under time pressure; for first person stems the increase was much more significant statistically ($p < .001$) than for third person stems ($p < .05$). Thus, the most distinctive effect of time pressure here was that of having *S* give significantly more *NS* ratings to first person stems, which are generally considered more highly charged.

However, it should be noted that under both pressure and freedom, third person stems accounted for the overwhelming majority of the total *NS* ratings. The infrequency with which the first person construction yielded completions rated as

Table 1
Means and Standard Deviations for Non-Self Ratings

Items	Free Conditions		Pressure Conditions			
	Group F (N = 76)		Group P (N = 73)			
	M	SD	M	SD	<i>t</i>	* <i>p</i>
All items	17.7	11.05	23.5	9.47	3.37	<.001
1st person	3.7	4.01	7.3	4.69	4.79	<.001
3rd person	14.1	8.88	16.3	6.74	1.72	<.05

* one-tail test

NS is striking, especially under free conditions. These data confirm the previous findings of Dorris, Levinson, and Hanfmann (1953) and lend support to the assumption that a person is more likely to reveal ego-alien content when writing about another person rather than himself.

Conflict Score

Up to this point, the basic hypothesis has been supported by data based upon *S*'s own subjective rating of her completions as self or non-self related. But there is no objective proof that the actual content of the completions under pressure was, in fact, more ego-alien in the sense of implying conflict and maladjustment. Hence, a scoring of the content of the completions for the presence of conflict by clinically trained judges was required. The ideal solution might have been that of applying a standardized method of scoring sentence completion in the dimension of maladjustment, such as Rotter and Rafferty's 7 point scale (1950) to the approximately 12,000 responses in the sample. However, for the sake of economy two shortcuts were taken.

First, an arbitrary decision was made to score the completions only for the presence or absence of the most extreme degree of conflict (*C* 3 type) since such responses are readily identified by their extreme ego-threatening nature and general social unacceptability. Rotter and Rafferty (1950, p. 16) give as examples of

C 3 conflict completions which show the following kinds of difficulties: suicidal and death wishes, sexual conflict, fear of insanity, strong negative attitudes toward people, and bizarre attitudes. If such extremely ego-alien completions occur more frequently under pressure, the basic point will have been proved.

A second arbitrary decision was that of scoring only 20 of the 80 stems. Ten basic stems, with both the first and third person construction, were selected from those content areas to which college students are likely to be especially sensitive, namely, aggression, sex, and attitudes toward parents. Two clinically trained judges examined independently all of the completions to the 20 stems and selected those deserving a *C* 3 rating; the judges agreed on 95% of the items.

The frequencies of completions of the *C* 3 type found under pressure and freedom are presented in Table 2. The prediction that extremely ego-alien content occurs more frequently under pressure is clearly upheld by the data for the 20 stems. Since time pressure doubled the frequency of such content, the difference between the groups was significant at far less than .001 level of confidence.

The fact that the percentage of highly conflictful completions is relatively low for both groups (16% for Group P and 7% for Group F) is not surprising, given the normalcy of the sample and the fact that only extremely ego-alien content was scored *C* 3.

Table 2
Means and Standard Deviations for Conflict Score

Items	Free Conditions		Pressure Conditions			
	Group F (N = 76)		Group P (N = 73)			
	M	SD	M	SD	<i>t</i>	<i>*p</i>
All items	1.4	1.33	3.1	2.15	5.66	< .001
1st person	0.4	.66	1.1	1.17	1.42	< .10
3rd person	0.9	1.04	2.1	1.34	6.00	< .001

* one-tail test

Examples of such completions, obtained mostly under pressure conditions, are the following.

To the stem, *when people make her mad, she*, the following completions were given: "talks of suicide", "hurts them", "tears into them tooth and nail", "kicks and screams", "hits them", "bites", "explodes".

To the stem, *most men to her seem*, the following were given: "frightening", "obnoxious", "ridiculous", "ugly", "threatening", "expedable", "ogres", "evil."

To the stem, *she wishes her father would*, six Ss gave the response "drop dead" or "die."

Table 2 also includes a comparison of the frequencies with which first and third person stems elicited completions of the C3 type. Again, as would be expected, the third person construction accounted for the majority of the total highly conflictful responses under both pressure and freedom, proving that the actual content of completions to such stems is, in fact, more often extremely ego-alien. These data also confirm the previous findings of Dorris, Levinson, and Hanfmann (1953). Apparently the third person stem allows the attribution to others of highly undesirable impulses too threatening to be attributed to the first person.

In summary, the results of Part I prove decisively that the SC test taps somewhat different levels of psychic functioning when administered to independent groups under time pressure and freedom.

Under pressure the sentence completions are more ego-alien as rated by *S* herself and as judged by trained raters. Thus *S* behaves more revealingly (seemingly more maladjustively) under pressure and more defensively under freedom.

Part II The Relation of Maladjustment to Incongruence of Sentence Completions under Pressure and Freedom

The results of Part I demonstrated that by simply varying the amount of time pressure, somewhat different levels of psychic functioning were tapped in normal Ss, a highly self-conscious level where defenses play a larger role and a less consciously controlled level where ego-alien impulses are more likely to slip through. This finding suggested the possibility of measuring the amount of incongruence in these levels within a single personality through the simple procedure of testing a given *S* under *both* pressure and free conditions and then assessing the amount of dissimilarity in the completions obtained under the two conditions. If the completions are similar, harmony between levels is implied whereas if they are basically dissimilar, conflict is indicated. Such a measure of inter-test incongruence should be directly related to the variable of maladjustment (Dörken, 1953). Thus the basic hypothesis to be tested here is that rela-

anxious college Ss, in comparison to non-anxious Ss, show a greater degree of incongruence in the completions elicited upon repeat testing under pressure and freedom.

The Welch A Scale (1956) was chosen as the criterion for selecting extreme groups. This scale is closely related to high peaks on the *Pt* and *Sc* scales of the MMPI and to Block's factor Alpha (1965, p. 51ff). The Welch A scale identifies the type of maladjusted *S* most likely to show incongruence at the two levels being tapped by the SC test. It identifies Ss susceptible to anxiety, who are sensitizers and intellectualizers rather than deep repressors. Lazarus, Erikson and Fonda (1951) have demonstrated that intellectualizers, in comparison to repressors, give more free expression on a SC test to to emotionally charged material related to sex and hostility.

Method

Subjects

A new sample of 80 freshmen and sophomores in an introductory psychology course at Smith College was given the Welch test and the 20 Ss scoring in the top and bottom fourth of the A scale were selected for the Anxious and Non-Anxious groups.

Procedure

The SC test was administered to the two extreme groups first under time pressure and, after a lapse of three weeks, under free conditions. The instructions and the design of the SC test were those reported in Part I. Only two changes were made in the procedure. Ten new stems were added to the previous 80 item test in order to increase the number of stems falling into the sensitive categories of sex and aggression. Secondly, *S* was asked to rate her completions as self or non-self related only after she had taken the test under both pressure and freedom.

Incongruence Measures

To assess the amount of dissimilarity in the completions obtained upon repeat testing under pressure and freedom, two related measures of incongruence were obtained.

The purpose of the *D* Score was to separate clearly congruent content from incongruent content of possible dynamic significance. The criterion here was absence or presence of similarity in the *literal meaning* of paired completions. The completions given to the 90 stems

were paired and two judges were asked to compare the response given under freedom to that given under pressure, and to separate the pairs into the two categories of similar (*S*) and different (*D*).

The criteria for classification were defined in advance as follows. *S* referred to either identity in verbal statement in the paired completions, or identity in manifest or literal meaning, despite some word changes. This criterion was applied very strictly. *D* referred to any kind of change in meaning in the paired completions. It included changes in feeling or attitude, in action, or in the person or object toward which the attitude or action was directed. It should be noted that although this category included differences of clear dynamic significance, such as complete reversals in meaning, it also included differences having no such significance. For example, the pair of responses "art" and "music" to the stem *my greatest talent is* was scored *D*.

The purpose of the *A* Score was to classify the paired items scored as *D* above into three categories of adjustive significance. The question here was whether, when one compared the completion given under freedom to that given under pressure, the change in content indicated a shift in the adjustive direction (scored *A+*), in the maladjustive direction (scored *A-*) or indicated no change at all in adjustment level (scored *A=*). Rotter and Rafferty's (1950) scale for scoring completions on the variable of adjustment was used as a reference point. All completions were rated first on a three-point adjustment scale as *conflict* responses, *neutral* responses, or *positive* responses, and then the following rule was applied. A score of *A+* or *A-* was given to those paired completions in which there was a clear shift in the three-point adjustment scale, either in the positive or negative direction. Paired completions which showed no shift in adjustment level were omitted from the results since this score would be the reciprocal of the sum of the + and - scores. The agreement between the two judges' ratings was 96% for Score *D* and 91% for Score *A*.

Results

Given the basic hypothesis, that anxious Ss, in comparison to non-anxious Ss, show more incongruence in their sentence completions under pressure and freedom, the following predictions were tested here. First, anxious Ss have a greater amount of dissimilarity (*D*) in the content of their completions under pressure and freedom. Second, although both the Anxious and Non-Anxious Groups

Table 3
Mann-Whitney U Test for Changes
in Content upon P-F Repeat Testing

Measure	Anxious Group		Non-Anxious Group			
	N = 20		N = 20			
	Median	Mean	Median	Mean	U	*p
D Score	52.5	51.3	37.5	39.1	67.0	< .001
A+ Score	16.0	15.7	9.5	9.2	65.0	< .001
A- Score	5.5	5.7	3.5	4.3	131.5	< .05

* one-tail test

have more content shifts in the positive direction of better adjustment under freedom (A+ shifts), the Anxious Group will have a greater frequency of such shifts. Non-parametric statistics, described by Siegel (1956), were applied since most of the distributions were highly skewed or even J-shaped.

The results, presented in Table 3, clearly supported both of the above predictions. The Anxious Group showed a much larger amount of gross difference in the content given under pressure and freedom; approximately 60% of the completions given under freedom were different in literal meaning (D-score) from those given under pressure to the same sentence stems. The comparable figure for the Non-Anxious Group was 40%. Application of the Mann-Whitney U test of significance showed that the difference between the groups was significant at a confidence level of less than .001.

The high degree of dissimilarity in the content obtained under pressure and freedom is not surprising since, as explained earlier, the D category included any kind of difference in manifest meaning, even minor difference of no dynamic or clinical significance. The most striking changes in meaning were cases of complete reversal, in which the completion under freedom reversed the feeling, attitude or ac-

tion of the response given under pressure. Such instances of the defense of reaction formation were twice as frequent for the Anxious Group as for the Non-Anxious Group; the means were 5.3 and 2.7 respectively, with the difference significant at a confidence level of less than .01.

Also shown in Table 3 are the results of differentiating between those differences in content under pressure and freedom which had clear adjustive significance from those which had none. Approximately 40% of the paired completions originally scored D differed in adjustment rating. As would be expected from the results of Part I, where freedom from time pressure was shown to decrease ego-alien content, the overwhelming majority of the completions given by both groups under freedom were rated as more adjustive (A+ score) than those given first under pressure to the same stems. As predicted the anxious Ss, in comparison to the non-anxious, had a much higher frequency of such adjustive shifts; the difference between the two groups was significant at a confidence level of less than .001. Although the anxious Ss also had a higher frequency of shifts in the maladjustive direction (A-score), the difference between the groups was statistically significant at only the .05 level.

The fact that the anxious S was more

likely to give a more adjustive completion under freedom than under pressure can be explained as follows. The anxious *S* was more likely to allow ego-alien content to slip out under time pressure but often was able under freedom to offer a more self-acceptable response. Hence, the high frequency of shifts in the adjustive direction. In contrast, the non-anxious *S* was able, even under pressure to avoid giving many ego-alien responses and gave instead relatively more-ego-syntonic responses under both pressure and freedom.

Decisive evidence to support the above explanation is provided by examining in Table 4 the non-self ratings given by the *Ss* themselves to their completions. Under pressure, the Anxious Group had a much higher frequency of non-self ratings, implying ego-alien content, than did the Non-Anxious Group; the difference between the groups was significant at less than the .01 level. Under freedom the difference though reduced in amount, remained statistically significant. Thus, the Anxious Group had a relatively large reduction in the frequency of non-self ratings given under freedom, in comparison to the number given under pressure. The Non-Anxious Group had a much smaller reduction.

All of the evidence, then, supported the basic thesis that anxious *Ss*, of the sensitizer type, show more incongruence in the completions given under pressure

and freedom. This incongruity can be accounted for by the fact that under time pressure the anxious *S* was more likely to allow extremely ego-alien content to slip out, such as strong hostile attitudes toward others, even death wishes. Under freedom, however, the anxious *S* was able, through such defense mechanisms as reaction-formation and intellectualization, to transform the originally ego-alien response into a self-acceptable completion.

Part III Intra-Individual Variability upon Repeat Testing

Despite all of the evidence provided above to prove that time pressure encourages a different level of psychic functioning which favors ego-alien completions, a further check experiment is required. It could be argued that the difference in content obtained in Part II under pressure and freedom was merely a function of *repeat* testing. It is possible that if the SC test had been repeated under identical conditions, the second administration would have yielded more ego-syntonic material, since the *S* would have had practice in taking this type of test.

To check this point, two randomly selected samples of 40 Smith College students were given the SC test twice with a three-week interval between the tests. For Group P-P the test was repeated under identical conditions of time pressure,

Table 4
Mann-Whitney U Test for Non-Self
Ratings upon P-F Repeat Testing

Instructions	Anxious Group		Non-Anxious Group			
	N = 20		N = 20			
	Median	Mean	Median	Mean	<i>U</i>	* <i>p</i>
Pressure	19.0	19.9	10.5	12.7	108.5	<.01
Freedom	9.5	12.0	6.0	7.3	135.5	<.05

* one-tail test

Table 5
Means and Standard Deviations for Changes in
Content upon P-P and P-F Repeat Testing

Measure	Group P-P		Group P-F			
	N = 40		N = 40			
	M	SD	M	SD	<i>t</i>	<i>p</i>
D Score	28.2	6.56	47.9	10.45	9.96	< .001
A+ Score	4.2	2.17	12.8	5.09	9.71	< .001
A- Score	4.9	2.97	5.3	2.73	0.62	NS

while for Group P-F the test was taken first under pressure and then under freedom. All other aspects of the procedure were those reported previously.

The results for the check experiment, presented in Table 5, prove conclusively that the differences in content obtained upon repeat testing under pressure and freedom cannot be attributed to mere intra-individual variability upon repeat testing. Group P-F, in comparison to Group P-P, had a much higher frequency of changes in literal meaning (*D*-score) and in the frequency of dynamic shifts in the adjustive direction (*A+* score); the difference between the groups was significant way below the .001 level of confidence for both these scores. As expected, the difference between the groups for shifts in the maladjustive direction was not significant.

The fact that mere repeat testing under identical conditions did produce a considerable amount of intra-individual variability supports the previous findings of Osterweil and Fiske (1956). For Group P-P, 31% of the paired completions were different in literal meaning (*D*-score) which, of course, does not necessarily imply a difference in dynamic meaning. For this group only 10% of the paired completions were dynamic shifts, with the frequencies of shifts in the adjustive and maladjustive direction approximately

equal. Apparently, whether the first or second testing yields the more adjustive completion is purely a matter of chance upon repeat testing under identical conditions.

Discussion

The findings of this research have several theoretical implications. The first of these relates to the current controversy over the level at which the SC test should be positioned in the hierarchy of levels within the personality. Exactly what level does the SC tap? Filmer-Bennett and Klopfer (1962) and Goldberg (1965, p. 15) have described the varying opinions on this issue. The present research proves that the level tapped by the SC test is highly dependent upon the instructional set given the *S*. One can effectively deepen the level activated by merely increasing time pressure. A final answer, then, to the issue of level requires specification of the conditions of administration.

The above controversy is directly related to the basic problem of understanding the psychological process involved in the production of sentence completions. Here again no answer is possible without specification of the conditions of administration, for there is a striking difference in the process under pressure and under freedom. While administering the SC test,

it was clearly evident that the free condition was much more disturbing to *S* than the pressure one. This was evidenced by the general behavioral tension openly exhibited, by the complaints about the test, and by the fact that there were many more failures to complete all items under freedom. Free conditions seem to induce a highly self-conscious regulation of the process since the *S* feels personally responsible for the quality of his completions; through careful selection and censorship the *S* offers primarily self-approved information that he is quite willing to share with others. In contrast, under time pressure, if *S* follows the instructions and automatically reports the *first* completion that pops into his head, he feels free of any such feeling of personal responsibility for his completions. Since the consequent process is relatively free of conscious control and selection, the *S* is likely to give additional information unwittingly, thus, revealing motives, feelings and wishes of which he himself is only dimly aware. Free conditions, then, reveal the personality "at its best" while pressure conditions seem more effective in bringing to the surface vulnerable, ego-alien areas of the personality.

The practical implications of the findings are self-evident. Since SC tests are usually scored for maladjustment in terms of the amount of conflictful and ego-alien content produced by *S*, it is critical that the timing of a given test be standardized. A specific behavior indicator, such as an ego-alien response cannot have a fixed symptomatic meaning under both pressure and free conditions.

Perhaps the most interesting aspect of this research is the demonstration that a measure of the degree of incongruity between different levels within the personality can be obtained by simply assessing the degree of dissimilarity in the completions obtained from a given *S* under pressure and free conditions. That this approach to the measurement of incongruence is feasible for other tests is suggested by previous research on inkblots (Siipola & Taylor, 1952) and word association (Siipola, Walker, & Kolb, 1955).

In fact, this approach to the measure-

ment of congruence within the personality, which is based upon giving *S* the same test under varying instructions, seems much more promising than the standard clinical procedure of comparing a given *S*'s responses on highly dissimilar tests, each of which supposedly taps a different level of the personality. Since the various tests (Rorschach, TAT, SC) involve highly different psychological processes and thus produce data varying in innumerable dimensions, an objective measure of congruence, varying in only one dimension, is difficult to find.

Moreover, the technique of repeat testing under different conditions could provide the clinician with an additional tool for increasing a patients' insight as well as his own. In the present research, *S* usually forgot many of the completions she had originally given under pressure and expressed great shock, surprise, or amusement when confronted with her original completions. *S* was, therefore, forced to face the presence of certain incongruities within her total personality.

Finding that the measures of incongruence were directly related to the variable of anxiety in college *Ss* provides supporting empirical evidence for the theory (Dörken, 1953; Turner & Vanderlippe 1958) that well adjusted individuals possess basic congruence and harmony within their personality structures while maladjusted individuals exhibit a higher degree of incongruence and conflict between different levels of the personality. Since the present finding was based upon extreme groups selected from a relatively normal college population, and upon a limited measure of maladjustment, one would expect even more definitive results from maladjusted samples of the population.

In future research it is possible that the measures of incongruence could be refined to detect the means by which adjusted and maladjusted *Ss* transform the deeper, more ego-alien content through varying defense mechanisms into ego-syntonic content. For example, the present research revealed that the anxious *S* was more prone to use the defense mechanism of reaction formation by completely reversing under freedom the meaning

of the ego-alien completion originally given under time pressure.

REFERENCES

- Block, J. *The challenge of response sets*. New York: Appleton-Century-Crofts, 1965.
- Dörken, H. Projective tests and the consistency of the personality structure: A pilot study. *Journal of Abnormal and Social Psychology*, 1953, 48, 525-531.
- Dorris, R. J., Levinson, D. J. & Hanfmann, E. Authoritarian personality studied by a new variation of the sentence completion technique. *Journal of Projective Techniques*, 1953, 17, 280-294.
- Filmer-Bennett, G. & Klopfer, W. G. Levels of awareness in projective tests. *Journal of Projective Techniques*, 1962, 26, 34-35.
- Goldberg, P. A. A review of sentence completion methods in personality assessment. *Journal of Projective Techniques & Personality Assessment*, 1965, 29, 12-45.
- Hanfmann, E. & Getzels, J. W. Studies of the sentence completion test. *Journal of Projective Techniques*, 1953, 17, 280-294.
- Lazarus, R. S., Eriksen, C. W., & Fonda, C. P. Personality dynamics and auditory perceptual recognition. *Journal of Personality* 1951, 19, 471-482.
- Osterweil, J. & Fiske, D. W. Intra-individual variability in sentence completion responses. *Journal of Abnormal and Social Psychology*, 1956, 52, 195-199.
- Rotter, J. B. & Rafferty, J. E. *Manual: The Rotter incomplete sentence blank*. New York: Psychological Corporation, 1950.
- Siegel, S. *Nonparametric statistics for the behavioral sciences*. New York: McGraw-Hill, 1956.
- Siipola, E. & Taylor, V. Reactions to ink blots under free and pressure conditions. *Journal of Personality*, 1952, 21, 22-47.
- Siipola, E., Walker, W. N., & Kolb, D. Task attitudes in word association, projective and nonprojective. *Journal of Personality*, 1955, 23, 441-459.
- Stone, H. K. & Dellis, N. P. An exploratory investigation into the levels hypothesis. *Journal of Projective Techniques*, 1960, 24, 333-340.
- Turner, R. H. & Vanderlippe, R. H. Self ideal congruence as an index of adjustment. *Journal of Abnormal and Social Psychology*, 1958, 57, 202-206.
- Welch, G. S. Factor dimensions A and R. In G. S. Welch & W. G. Dahlstrom (Eds.), *Basic readings in the MMPI in psychology and medicine*. Minneapolis: University of Minnesota Press, 1956.

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The Diagnostic Utility of Welsh's A-R Categories

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Summary: The purpose of this study was to determine if the diagnosis-A-R category relationships described by Welsh hold for other patient samples. White, nonorganic males were categorized into one of four quadrants using Welsh's criteria. Statistical analysis showed no differences among the subgroups with regard to age, IQ, education or marital status. The major analysis disclosed no support whatsoever for Welsh's findings, either for all diagnostic groupings or for the separate diagnostic subgroupings presumably related to specific quadrants.

Welsh (1956, 1965) has categorized MMPI data by means of conjoint use of Anxiety (*A*) and Repression (*R*) scale scores. Thus, in the earlier publication, patients scoring high on *A* and high on *R* were found to be diagnosed most frequently as depressed, while those scoring low on *A* and low on *R* were typically diagnosed as behavior and character disorders. Further, patients who scored high on *A*, but low on *R* were often found to be psychotic, whereas those who scored low on *A*, but high on *R* were usually found to be neurotic of a hysteric or conversion type. The more recent publication presents a more complex nine-category classification scheme in which high, medium, and low scores on the two scales are used together. This newer procedure does not specify diagnostic correlates; instead, generalized personality descriptions are given. For example, the low *A*, low *R* *S*, previously categorized as behavior disorder, is now described (Welsh, 1965) as "...arrogant, boastful and self-centered; some are seen as dishonest and suspicious. Patients may show episodic attacks of acute distress in various organ systems but these physical problems are not severe and generally yield to superficial treatment (p. 47)."

Since *A* and *R* scores can be readily obtained from MMPI data, the relationships described are relatively specific, and new cookbook interpretations are usually greeted with enthusiasm, one might have predicted that Welsh's papers would generate considerable interest and research. A review of the literature, however, discloses no studies designed to test these hypotheses. The purpose of this investigation is to determine whether Welsh's quadrant and

novant summaries of MMPIs hold for white males other than those in VA hospitals or clinics. Diagnoses and brief behavioral descriptions of males hospitalized in an urban mental health center will be compared to their *A-R* categories to confirm (or reject) Welsh's findings.

Method

Subjects for this study were obtained from the 1957-1967 files of patients referred for psychological testing at Malcolm Bliss Mental Health Center, an acute, intensive treatment facility which serves an indigent, racially mixed, urban population. From this pool 140 white, nonorganic males were selected who had completed a valid MMPI and who fit into one of the eleven diagnostic categories used by Welsh in his 1956 study of *A* and *R*. The diagnoses and their frequencies in the present study were paranoid schizophrenia, 18; severe neurosis, 6; anxiety state, 1; reactive depression, 8; psychotic depression, 5; mania, 2; alcoholism, 23; behavior disorder, 73; mild neurosis, 2; hysteria and conversion reaction, 2. These diagnostic frequencies are not representative of the usual Malcolm Bliss base rates since non-paranoid schizophrenics and organic patients are not included in Welsh's classifications and so were omitted from consideration in the present study.

The MMPIs of all white males who met the diagnostic criteria and for whom age, education, and IQ were available were scored for the *A* and *R* scales. These protocols were then categorized into quadrants using Welsh's criteria. There were 92 white males who were classified as falling in Quadrant I (high *A*-low *R*), 53 in Quadrant II (high *A*-high *R*), 40 in Quad-

rant III (low *A*—low *R*), and 35 in Quadrant IV (low *A*—high *R*). Since an equal number of *Ss* from each quadrant was desired, only the first 35 *Ss* (in alphabetical order) were selected from each quadrant, as this was the number available for Quadrant IV. Age of the total sample ranged from 15 to 60 years with a mean of 32.8; education ranged from 2 to 19 years with a mean of 10.1; IQ ranged from 74 to 137 with a mean of 104.3. There were no significant differences among the four groups on these three variables or on marital status.

An attempt was also made to analyze, in a similar manner, Welsh's 1965 extension of these quadrants into novants. However, this was found to be impossible due to the heterogeneous and overlapping personality descriptions used to define the novants. For example, the per-

sonality description (Welsh, 1965) for Novant II (high *A*—medium *R*) is:

Severe personality difficulties may be expected with loss of efficiency in carrying out duties. There may be periods of confusion, inability to concentrate, and other evidence of psychological deficit. Symptoms of depression, anxiety and agitation predominate although hysterical disorders sometimes appear. Subjects are often described as unsociable (p. 46).

This novant seems to include elements from various diagnostic categories such as organicity, psychosis, hysteria, and anti-social personality. In the present study the behavioral observations from the patients' psychological reports were used to try to classify *Ss* into novants but there was insufficient information to do so. Cross validation of Welsh's 1965 classifications would seem to require informa-

Table 1
Distribution of Diagnostic Classifications for Welsh's *A-R* Quadrants

	Quadrants				Total
	I	II	III	IV	
Paranoid Schizophrenia	3	5	3	7	18
Severe Neurosis	1	3	2	0	6
Anxiety State ^a	0	0	0	1	1
Reactive Depression	2	4	0	2	8
Manic-Depressive, Depressed	0	2	2	1	5
Anxiety State ^a	0	0	0	0	0
Manic-Depressive, Manic	1	0	0	1	2
Alcoholism	8	6	8	1	23
Behavior Disorder	20	15	18	20	73
Mild Neurosis	0	0	1	1	2
Hysteria	0	0	0	0	0
Conversion Reaction	0	0	1	1	2
Total	35	35	35	35	140

^a Welsh locates "Anxiety State" in two of his diagnostic groupings. As only one occurred in our sample, he was classified by flipping a coin.

tion from an adjective checklist administered at the time of testing.

Results and Discussion

To confirm the A-R-diagnosis relationships postulated by Welsh, patients diagnosed as paranoid schizophrenia or severe neurosis should fall primarily into Quadrant I, patients diagnosed as depression should for the most part be classified as Quadrant II, patients diagnosed as manic, alcoholic or behavior disorder should cluster in Quadrant III and patients diagnosed as mild neurosis, hysteria, or conversion reaction should be typically classified as Quadrant IV. Table 1 clearly indicates that none of these relationships was present in our sample. Statistical analyses confirm this observation ($X^2 = \text{N.S.}$; coefficient of contingency = .05).

The reasons for the discrepancy between our findings and Welsh's results are not clear. His Ss are described only as white males in V.A. settings and may differ from our Ss in age and/or education. However, we excluded females and Negroes from our sample deliberately to enhance the similarity between the two samples. Although Welsh (1956) described his earlier findings as "tentative" and stated that "the cases in the various diagnostic groups distribute themselves quite generally over the area and only the most obvious clusterings of the largest groups

can be reported here (p.277)", his more recent findings bear an obvious correspondence to and support his previous observations. The high A-high R category in both presentations, for example, focuses clearly on depression. Our inability to check out his novant descriptions, for the reasons given earlier, was a major disappointment.

Welsh (1965) cautions against taking his descriptions literally and using them for "cook-book" interpretations of profiles. He recommends that the summaries be viewed as "general concepts that can lead to hypotheses for further investigation (p. 47)." One cannot disagree with this suggestion, in principle, but one can certainly question in the light of our findings whether the A-R categories in fact measure what they are supposed to measure.

REFERENCES

- Welsh, G. S. Factor dimensions in A and R. In G. S. Welsh and W. G. Dahlstrom (Eds.) *Basic readings on the MMPI in psychology and medicine*. Minneapolis: Univ. Minnesota Press, 1956.
- Welsh, G. S. MMPI profiles and factor scales A and R. *Journal of Clinical Psychology*, 1965, 21, 43-47.
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Masculinity-Femininity and Need for Social Approval

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Summary: The relationship between the need for social approval and sex role identification was investigated. The Marlowe-Crowne social desirability scale, the Edwards social desirability scale and the masculinity scale of the Guilford-Zimmerman Temperament Survey were given 184 college students. The results indicate independence between sex role identification and need for social approval, irrespective of biological sex. Thus, this research aids in defining the properties of the construct. The relationships found provide evidence for Crowne and Marlowe's argument that the Edwards scale is, in part, a measure of willingness to admit to weakness and pathology while the Marlowe-Crowne scale is independent of such willingness.

The Marlowe-Crowne social desirability scale (MC-SD) purportedly measures a general construct, "the need for social approval" (Marlowe and Crowne, 1961). Considerable research has been aimed at validating this construct and results have been encouraging. For example, Marlowe and Crowne (1961) found that MC-SD scores were related to expressed attitudes toward a boring task, with high MC-SD scorers reporting more favorable attitudes toward the task than Ss scoring low on the MC-SD. Strickland and Crowne (1962) report that high MC-SD scorers conformed significantly more to simulated group pressures than did Ss scoring low on this scale. Marlowe (1962) demonstrated that high MC-SD scorers were more readily conditioned to emit positive comments regarding themselves than were low scorers. Barthel and Crowne (1962) found that high scoring Ss took significantly more trials to recognize taboo versus neutral words than did low scoring Ss. Further research lends additional support to the validity of the construct. (Hicks, 1966; Miller, Doob, Butler, & Marlowe, 1965.)

The purpose of the present research was to define even further the properties of this construct. The data now available on the MC-SD scale strongly suggests that the construct, need for social approval, is independent of sex. That is, the predicted relationship between MC-SD test scores and experimental tasks apparently holds regardless of the sex of the Ss. Also, no sex differences seem to emerge in research utilizing both male and female Ss. This apparent independence between the need for social approval and sex raises the interesting question of whether or not the construct is unrelated to one's sex role

identity, as well as to one's biological sex. The present experiment investigates this question. To the extent that male and female Ss utilized in previous research on the MC-SD scale represent an adequate sampling of sex-role identification it might be expected that MC-SD scores and an indicant of sex role identification are unrelated. However, it is necessary to explore this possibility empirically.

Method

The masculinity scale of the Guilford-Zimmerman Temperament Survey, the Marlowe-Crowne social desirability scale, and the Edwards social desirability scale were administered to 184 college students, 96 males and 88 females. The masculinity scale represented the measure of sex role identification. In general this scale measures the degree of masculine orientation irrespective of biological sex. In terms of sex role identification, a high scoring male is considered to be well adjusted to his sex role, a low scoring male poorly adjusted to his sex role, a low scoring female well adjusted to her sex role, and a high scoring female poorly adjusted to her sex role. The Edwards social desirability scale was included to provide further information regarding the relationship between this scale and the Marlowe-Crowne scale. Also, it is of interest to investigate the relationship between the Edwards scale and masculinity-femininity.

Nine Pearson product moment correlations were obtained from these data. Guilford-Zimmerman masculinity scores and Marlowe-Crowne social desirability scores were correlated to investigate the relationship between degree of masculine

Table 1
Correlations Among Tests Administered

Scales Correlated					
	<i>N</i>	<i>df</i>	Marlowe-Crowne Guilford- Zimmerman	Marlowe-Crowne Edwards	Edwards Guilford- Zimmerman
Total sample	184	182	-.02	.31*	.34*
Females	88	86	.05	.37*	.42*
Males	96	94	.09	.29*	.26*

* $p < .01$

orientation regardless of biological sex and need for social approval. To investigate the relationship between need for social approval and sex role identification, separate correlations between Guilford-Zimmerman masculinity scores and Marlowe-Crowne social desirability scores were computed for males and for females. Guilford-Zimmerman masculinity scores and Edwards social desirability scores were correlated to explore the relationship between degree of masculine orientation and social desirability. Guilford-Zimmerman scores and Edwards scores were correlated for both males and females to determine the relationship between social desirability and sex role identification. Finally, correlations were performed between the Marlowe-Crowne social desirability scale and the Edwards social desirability scale for the total sample, for female subjects and for male subjects.

Results and Discussion

Table 1 shows the results obtained from all nine Pearson product moment correlations. It is clear from these data that Marlowe and Crowne's construct, the need for social approval, is unrelated to masculine orientation ($r = -.02$). Need for social approval also appears to be unrelated to sex role identification irrespective of the sex of the *S* ($r = .05$, males; $r = .09$, females). Thus, the findings are consonant with the expectation that the

construct, the need for social approval, cuts across orientation toward one's sex role as well as across biological sex.

Crowne and Marlowe (1960) and Marlowe and Crowne (1961) report significant positive relationships between the Marlowe-Crowne scale and the Edwards scale ($r = .56$, $N = 29$) ($r = .35$, $N = 120$). Table 1 shows a similar finding ($r = .31$) and also this positive relationship occurs in both sexes ($r = .37$, $r = .29$). These present data also indicate a significant positive relationship between the Edwards scale and the masculinity scale ($r = .34$). Thus, it is clear that the Marlowe-Crowne and the Edwards scales contain common variance which may be related in some ways to response sets or needs to respond in a socially desirable manner. However, it also appears that the variance which the Edwards and the Marlowe-Crowne scales have in common is unrelated to masculine orientation or to sex role identification, as currently measured.

The relationships obtained provide interesting information in light of Crowne and Marlowe's argument (1960) regarding the differences between their scale and the Edwards measure of social desirability. These same authors (1961) suggest that the Edwards scale is related to the degree to which an individual is willing to admit to weakness, maladjustment, symptoms, and so forth. A high score on the Edwards scale purportedly reflects an unwillingness

to admit to such inadequacies. Considering the general traits associated with masculinity and femininity within our culture the present data provide some corroboration for their assertion.

Evidence indicates that, in part, the masculine role in our culture is highly associated with traits such as strength, competence, and forcefulness. On the other hand, evidence indicates the feminine role is, in part characterized by weakness, inadequacy, and passivity (Mussen, Conger, and Kagan, 1963; Watson, 1959). Also, these general traits purportedly characteristic of the two sex roles are reliably agreed upon by both men and women as components of masculinity and femininity (Bennett and Cohen, 1959). Therefore, it seems reasonable that these sex role associated traits will be assumed, at least in part, as a function of the degree to which an individual takes on a masculine or feminine orientation, independent of the individual's biological sex.

If Crowne and Marlowe are correct in their argument, one would expect that scores on the Edwards scale would be positively related to an overall index of masculine orientation regardless of biological sex, in that a high score on the Edwards scale should reflect an unwillingness to admit to weakness, an assumed correlate of masculinity. The significant positive relationship between the Edwards scale and the masculinity scale ($r = .34$) is consonant with this expectation.

It would also be expected that the degree to which females take a masculine orientation should be positively related to scores on the Edwards scale, again reflecting an unwillingness to admit to weakness. The obtained significant relationship ($r = .42$) supports this expectation. A similar relationship between the Edwards scores and the Guilford-Zimmerman scores would be expected for the male group. The correlation obtained ($r = .26$) corroborates this expectation.

Thus, taken as a whole these data tend to support Marlowe and Crowne's position (1961) regarding the differences between their scale and the Edwards measure. The findings also clarify to some extent the general properties of the construct, need for social approval.

REFERENCES

- Barthel, C. E. and Crowne, D. P. The need for approval, task categorization and perceptual defense. *Journal of Consulting Psychology*, 1962, 26, 547-555.
- Bennett, E. M. and Cohen, L. R. Men and women's personality patterns and contrasts. *Genetic Psychology Monographs*, 1959, 59, 101-155.
- Crowne, D. P. and Marlowe, D. A. A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 1960, 24, 349-354.
- Hicks, M. R. Social self and the social desirability motive. *Dissertation Abstracts*, 1966, 26, 4062.
- Marlowe, D. Need for social approval and the operant conditioning of meaningful verbal behavior. *Journal of Consulting Psychology*, 1962, 26, 79-83.
- Marlowe, D. and Crowne, D. P. Social desirability and response to perceived situational demands. *Journal of Consulting Psychology*, 1961, 25, 109-115.
- Miller, N., Doob, A., Butler, D., and Marlowe, D. The tendency to agree: Situational determinants and social desirability. *Journal of Experimental Research in Personality*, 1965, 1.
- Mussen, P., Conger, J., and Kagan, J. *Child development and personality*. New York: Harper and Row, 1963.
- Strickland, B. and Crowne, D. P. Conformity under conditions of simulated group pressure as a function of need for social approval. *Journal of Social Psychology*, 1962, 58, 171-181.
- Watson, R. *Psychology of the child*. New York: Wiley, 1959.

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Acquiescence Response Set: Construct or Artifact?¹

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Summary: A series of tests given to 94 adult white men were scored for acquiescence response set, personality traits, and cognitive functions. A factor analysis of the data indicated that the response set scales do not result from a single general underlying trait. No evidence was found to suggest a relationship between acquiescence response set and the cognitive functions represented in intellectual abilities, field dependency, or in behavioral rigidity. The acquiescence response set measures were judged to be measuring something with reliable consistency and that this something is other than a set to agree to statements or an artifact of the testing method.

Since Cronbach's (1950) summary, the research in the area of acquiescence response set has centered around three questions: (a) What is the reliability of the acquiescence response set scales? (b) Are the scales specific to a test situation or are they generalizable from one test to another? and (c) What is the place of acquiescence response set in a general theory of behavior?

A review of the historical development of this research (Lewis, 1967) indicates that acquiescence response set is judged to be relatively stable in internal consistency and over time (Cronbach, 1941, 1942, 1950; Fricke, 1956; Jackson & Messick, 1958; Couch & Keniston, 1960). Generality of the acquiescence response set as a concept beyond the instruments used to measure it has not yet been determined unequivocally (Nunnally & Hush, 1958; Jackson & Messick, 1958; Siller & Chipman, 1962; McGee, 1962a, 1962b, 1962c; Forehand 1962). Attempts to identify the specific variance found in measures of acquiescence response sets have to date met with little success (Foster, 1961; Husek, 1961; McGee, 1962b, 1962c; Rorer, 1965). However, there is evidence that some relationship with cognitive behaviors may exist (Eells in Cronbach, 1950; Jackson & Messick, 1957, 1958; Gardner, Holzman, Klein, Linton, & Spence, 1959; Forehand, 1962). The present study using a factor analytic technique examines the relationship of acquiescence response set with intellec-

tual abilities, with field-dependence, and with rigidity and its relationship with personality as measured by the Minnesota Multiphasic Personality Inventory (MMPI) and Cattell's 16 P.F. (16 PF).

Procedure

Subjects

The sample consisted of 94 white males who were members of the Lincoln City Fire Department and whose ages ranged from 22 to 58 years with a mean age of 29.5 years. Their years of education ranged from 7 to 14 years; only 10 had not completed high school, and 15 had had some college training. Only volunteer Ss were used.

Test Administration

The Ss were examined during their on-duty hours in groups ranging in size from 3 to 18 men. All tests were administered in the group setting except the Embedded Figures Test which was given to each S individually. The following tests were administered to all Ss:

- (a) Agreement Response Scale (ARS), (Couch & Keniston, 1960).
- (b) Test of Behavioral Rigidity (TBR), (Schaie, 1955).
- (c) Perceptual Reaction Test (PRT), (Berg & Hunt, 1949).
- (d) Embedded Figures Test (EFT), (Witkin, 1950).
- (e) SRA Primary Mental Abilities (PMA), (Thurstone, 1958).
- (f) 16 PF Test, Forms A and B (Cattell & Eber, 1957).
- (g) MMPI (Hathaway & McKinley, 1951).

The TBR, PRT, PMA, 16 PF, and the MMPI were given in the standardized man-

¹ Based on a doctoral dissertation submitted to the Department of Psychology at the University of Nebraska under the supervision of Dr. David Levine.

Table 1
Rotated Factor Loadings

Test	Variable	I	II	III	IV	V	VI	VII	VIII	h^2
	Age	19	-17	-15	+15	-01	10	02	62	51
PMA	V	-09	77	-01	01	10	-22	-04	14	68
PMA	S	11	23	-23	08	-05	-62	-18	-06	55
PMA	R	05	51	06	-15	-06	-36	-18	-44	65
PMA	W	-06	72	01	04	-14	-14	-20	-05	60
PMA	N	18	69	-02	17	-15	07	-12	-23	64
ARS	ARS	-06	-01	-03	41	48	10	03	30	50
PRT	AR	-01	-03	-08	01	-02	-04	54	19	33
PRT	ERS	-01	-23	07	13	04	15	61	-20	51
EFT	X_I	-19	-19	01	-00	13	74	06	05	64
EFT	e_I	10	-40	-06	05	00	57	01	15	52
EFT	S	-03	10	12	-28	13	66	17	16	61
EFT	X_{II}	-20	-22	-12	09	-10	75	-11	-09	71
EFT	e_{II}	13	-22	-47	11	-18	35	-34	-30	66
16 PF	A	-08	01	61	-06	-18	32	05	24	58
16 PF	B	33	29	-21	18	17	-34	-16	18	47
16 PF	C	67	-01	19	-10	-13	-34	-16	14	67
16 PF	E	-34	06	61	00	-30	-10	-14	-06	63
16 PF	F	-03	13	66	11	21	-06	-13	-32	64
16 PF	G	57	13	-07	18	11	-20	-31	18	56
16 PF	H	37	01	73	-02	-05	+07	08	-06	69
16 PF	I	-52	13	23	-20	-07	33	12	-06	52
16 PF	L	-59	16	00	-03	-06	03	-07	42	56
16 PF	M	-61	-06	00	-12	-11	-01	36	18	57
16 PF	N	30	-15	11	24	-67	04	-21	10	70
16 PF	O	-68	04	-21	15	26	06	16	09	64
16 PF	Q_I	-14	10	05	-01	-75	-13	22	03	66
16 PF	Q_2	-30	17	-64	-20	-03	-08	02	09	58
16 PF	Q_3	73	06	04	-09	08	04	06	13	58
16 PF	Q_4	-63	05	-06	29	45	01	-07	-09	71
MMPI	A	-43	01	-17	53	06	18	55	03	83
MMPI	R	04	00	-08	-73	-03	23	03	01	60
MMPI	SD	44	11	01	-34	12	-23	-60	16	79
MMPI	Ac	-12	10	02	78	-06	-06	28	06	73
MMPI	Es	36	12	-02	-13	06	-33	-61	05	66
TBR	MCR	11	47	-09	-19	03	-23	18	-39	52
TBR	PPR	-06	-11	-28	-47	03	-35	-08	-19	48
TBR	PS	00	76	14	-00	20	-10	02	05	65
% h^2		19	15	12	11	9	16	11	7	100
% V_t		12	9	7	7	5	9	7	5	61

Note.—Decimal points have been omitted. Loadings beyond .30 are shown in italics.

ner using the instructions as contained in the manuals.²

These seven tests yielded 38 scores. These scores, their symbols, and their sources are as follows: the patient's age; *ARS* from the Agreement Response Scale; from the MMPI, Shaffer's (1963) Acquiescence Scale (*Ac*), Edwards' (1957) Social Desirability Scale (*SD*), Barron's (1953) Ego-strength Scale (*Es*), and Welsh's (1956) *A* and *R* scales; from the PRT the *A* (acquiescence) and *ERS* (extreme response scale); from the PMA, the five factors Verbal Meaning (*V*), Space (*S*), Reasoning (*R*), Numbers (*N*) and Word-Fluency (*W*); from the TBR the *MCR* (motor-cognitive rigidity), *PR* (personality-perceptual rigidity) and *PS* (psychomotor speed); from the 16 PF, 16 variables composed of summing the 32 factor scores from Forms A and B; and from the EFT, five variables. The five EFT variables are: \bar{X}_I the mean time required by *Ss* to solve each figure plus the number of failures on Cluster I; \bar{X}_{II} the mean time required by *Ss* to solve each figure plus the number of failures on Cluster II; *S* the number of times the *S* asked to view the sample figure for both clusters; e_I the number of errors on Cluster I; and e_{II} the number of errors on Cluster II (Lewis, 1967). A concise listing of the 38 variables is found in Table 1.

Results and Discussion

Reliabilities of the Response Set Scales

The split-half Spearman-Brown (Guilford, 1956, p. 438) reliabilities for the response set scales are: *ARS*, .70; *Ac*, .56; *AR*, .82; and *ERS*, .82.

Generalizability of the Response Set Scales

The intercorrelation matrix of the 38

variables is reproduced in Table A (see Footnote 2). Among the response set measures only the *ARS* and *Ac* scales are correlated beyond the .01 level ($r = .31$). Although there is a relationship between the two scales it is relatively weak and does not add support to the hypothesis that measures of acquiescence response set are general across scales. Instead, support is noted for the contention that such scales are specific to the test scales used to obtain them. Caution should be exercised in using them otherwise. This finding is in keeping with conclusions reported by other researchers (Rorer, 1965). Perhaps, since both *AR* and *ARS* are multiple category tests, this lack of generalizability is explainable by Schutz and Foster's (1963) suggestion that the varying categories on multiple category tests such as "strongly agree" set, "moderately agree" set, or "mildly agree" set are not measuring a single underlying dimension.

Factor Analysis

The correlation matrix was factor analyzed on an IBM 7040 computer by the principal-axes method, using unity in the diagonals. Fifteen factors were extracted. The first eight factors (Harmon, 1960, p. 187) were rotated to simple structure by the varimax method.³ The eight factors accounted for 61% of the total variance represented in the matrix. The rotated factor loadings and the distribution of the variance among the factors are given in Table 1.

The first and largest factor appears to represent a maturity vs. immaturity personality dimension, for it is identified by the scales from the 16 PF and from the MMPI which purport to measure this personality attribute. The acquiescence response set measures do not load on this factor.

The second factor is identifiable as an intellectual dimension and is composed of the intellectual measures and psychomotor speed. None of the acquiescence measures is represented.

The third factor seems to reflect an independence-dependence dimension of personality as measured by scales from the 16 PF. None of the response set measures loads on this factor.

² For a copy of the general instructions and special instructions for the *ARS* and *EFT* order NAPS Document 00024 from ASIS National Auxiliary Publications Service, c/o CCM Information Sciences, Inc., 22 West 34th Street, New York, N. Y. 10001, remitting \$1.00 for microfiche or \$3.00 for photocopies.

³ Intercorrelation matrix of original 58 variables is on file with the ADI.

The fourth factor might be called a questionnaire factor, as it is identified primarily by scales of the questionnaire variety. Both *ARS* (Acquiescence Response Scale) and *Ac* (MMPI Acquiescence Scale) have high positive loadings, as does *A* of the MMPI. *R* from the MMPI and *PPR* of the TBR have high negative loadings and *S* of the EFT has a moderate negative loading. All of the variables are questionnaire scales with the exception of *S* and each of these scales is keyed for true or false responses corresponding with the positive or negative factor loading of the variable—that is, those scales keyed predominantly “true” have positive loadings on this factor whereas scales keyed “false” have negative loadings. Item overlap is minimal and not sufficient to account for the interrelationships.

On the first consideration the most parsimonious explanation for the factor loadings on Factor IV is on the basis of an acquiescence response set effect due perhaps to an artifact of the testing method or to a tendency to agree to statements. If this factor were due to acquiescence response set effects, it would appear that variable loadings should be more nearly of equal size, since a set to respond in a particular way should be equally noted on similar scales. An additional difficulty with this explanation is the absence of the effect of the non-verbal acquiescence measure (*AR*) from this factor. The response set explanation disregards also any effects that may be due to item content.

Examination of the intercorrelations of the variables which load on Factor IV indicates that the following relationships exist: a moderate positive relationship among *Ac*, *ARS*, and *A*; moderate negative correlations between these three scales and the *PPR* of the TBR; a high negative correlation between *R* and *A*; and a weak positive relationship between *R* and *S*. The largest correlation is found between *Ac* and *R* and the highest factor loadings are noted for these scales also. The pattern of correlations and factor loadings for the MMPI scales suggests that this factor is highly similar to the MMPI Factor I as reported by Jackson and Messick (1961). In this study it seems

more accurate to name this a factor of questionnaire rigidity since the *PPR* is one of the marker variables, although the possibility that this factor is contaminated with acquiescence response set cannot be ruled out.

Factor V may represent a phlegmatic vs. excitable temperament dimension of personality (Cattell & Eber, 1957) and is identified by the 16 PF *Q*₁, *Q*₄, *N*, *E*, and *O* scales. *ARS* has a moderate loading on this factor. Examination of the correlation matrix reveals that *ARS* is related to *Q*₄ and *O*. *Q*₄ is identified by Cattell and Eber as one of the questionnaire factors which are found in personality test scales but not identifiable in other behavior. A comparison of item content of *ARS* and *Q*₄ indicates that both scales score responses toward the tense, excitable pole of the factor dimension. Grouped with *Q*₄ and *ARS* are *O* and *E*, with *Q*₁ and *N* responsible for the opposite pole. The relationship of *ARS* with the 16 PF scales on this factor may suggest a personality correlate for some of the *ARS* variance. This is one of the two smallest factors containing 9% of the common variance and 5% of the total variance.

Factor VI is a field dependency dimension identified by loadings on all scales of the EFT and *S* and *R* of the PMA. None of the response set measures are represented in this, the second largest factor of the matrix.

The seventh factor appears very similar to one of the MMPI factors reported by Jackson and Messick (1961), for the larger loadings come from the MMPI scales *A*, *SD*, and *Es*. The response set measures *AR*, *ERS*, and *Ac* are important elements on this factor; they all correlate with the *A* scale, but not with each other. All of the scales represented on the factor, with the exception of the *e*₁₁, show a strong relationship with *A*. When the high 16 PF *G* and *M* scale loadings are included the factor appears to represent a conventional vs. unconventional dimension of personality. The *e*₁₁ loading on this factor is difficult to interpret as this scale does not correlate with any of the other scales seen on the factor beyond the level to be expected by chance.

Factor VIII appears to be a rigidity

factor. The most important elements are age, *R* of the *PMA* and the *MCR* with moderate loadings on *F* and *L* of the 16 PF, *ARS*, e_{11} of the *EFT*, and a small loading on the 16 PF *A*. These scales are said to measure rigid and tyrannical personality traits.

Marker Variables

Although some of the marker variables have loaded on several factors, most have the major portion of their variance on a single factor. The 16 PF scales have helped to identify Factors I and III. The *PMA* scales, the *MCR* and *PS* of the TBR name Factor II. *R* from the MMPI and *PPR* of the TBR are found on Factor IV. Factor VI is composed of *S* and the *PMA* and the *EFT* scales.

It is evident that acquiescence response set as measured in this study is not related to Factors I, II, III, or VI or to any of the scales of the *PMA*, *EFT*, *PS* of TBR, or to *A*, *B*, *C*, *H*, *I*, Q_2 or Q_3 of the 16 PF. No evidence has been found in this study to substantiate identification of acquiescence response set as measured in this study with the cognitive functions measured by the *PMA* or *EFT*.

Most of the remaining marker variables, *MCR* and *PPR* of the TBR, *A* and *SD* of the MMPI, and *E*, *F*, *G*, *L*, *M*, *N*, *O*, and Q_4 of the 16 PF are factorially complex scales and load on more than one factor. They will be discussed as they relate to the response set measures.

Proportion of Variances

To further understanding of the action of the response set scales, estimates of error and specific variance of each of the scales were made using the reported reliabilities and communalities for this sample (Guilford, 1956, p. 438). It was found that the *ARS* has 30% error variance, *Ac* 44%, *AR* 18%, and *ERS* 18%. It was also noted that 20% of the reliable variance of the *ARS* is not identified in this study and is called specific variance. Forty-nine percent of the *AR* variance and 31% of the variance of the *ERS* is specific, but with the *Ac* scale it will be noted that the common variance reported is higher than the reported reliability. It appears that

some of the common variance must be error variance.

Response Set Measures

The *AR* and *ERS* are factorially the simplest of the response set scales as they load only on Factor VII. It is noteworthy that these nonverbal scales have the highest reliabilities and that *AR* has the smallest portion of its variance as common variance. *ERS* is positively related to *A* of the MMPI and *M* of the 16 PF and negatively related to *SD*, *Es*, and *G*. The *AR* is not correlated with *ERS* in spite of the overlap with it. *AR* is highly related to *A* and only at the .05 level with negative *SD*.

The *Ac* scale, a true-false measure of acquiescence response set, is the least reliable of the response set measures. All of its reliable variance is common variance. The major portion of its variance is found on Factor IV with a lesser portion on Factor VII. *Ac* relates positively with *A* and *ARS* and negatively with *R* and *SD*. This relationship with *A* and *SD* appears to account for the appearance of *Ac* on Factor VII. On Factor IV each of the scales with which *Ac* is correlated is present. What *Ac* is measuring must be identified through the *A* and *R* scales of the MMPI.

The *ARS* appears to be a highly complex scale as it appears with moderately high loadings on three factors and has 20% of its reliable variance unaccounted for within the factor pattern of this study. The *ARS* has a strong relationship with the *PPR* rigidity scale and has positive but modest correlations with Q_4 , *A*, and *Ac*. A portion of the scale would appear to be tapping some of the same questionnaire behaviors. Perhaps the weakness of these relationships and the complexity of the *ARS* are explainable by Schutz and Foster's (1961) claim that the varying categories on multiple category tests such as "strongly agree" set, "moderately agree" set, or "mildly agree" set are not measuring the same underlying dimension.

The *A* scale of the MMPI appears to be the one common element among the relationships of the response sets. The *A* scale correlates with each of the response set measures and loads on the factors upon which they also load. The exception is

the fifth and eighth factors where the appearance of *ARS* seems explainable by the complexity of the structure of the *ARS* and its relationship to other variables not related to the *A* scale.

Conclusions

The present data lead to the general conclusion that the acquiescence response set scales are factorially complex. Scores on these scales cannot be said to result from a general single underlying trait. There is also a need for caution in taking a response set measure from one instrument and using it as a measure of response set in a different situation. No evidence has been found to suggest a relationship with the cognitive functions represented in intellectual abilities, field dependency-independency, or in behavioral rigidity. The effect of acquiescence response set is negligible on personality inventories such as 16 PF. Although these response set scales have common variance with the MMPI scales, the proportion of the total variance is small and if some control procedures such as the type of balanced scales suggested by Block (1965) were used, these effects could be effectively controlled. Such control procedures are a necessity if the MMPI scales are to be used as marker variables in research, but are of little importance when the scales are used as personality or clinical scales. Nevertheless the response set scales have substantial reliability and most of the scales indicate unidentified reliable variance. They must be judged to be measuring something with reliable consistency, but this study does not make it possible to identify unequivocally the nature of the dimension they measure; however, this study does indicate that this something is other than a set to agree to statements or an artifact of the testing method.

REFERENCES

- Barron, F. An ego-strength scale which predicts response to psychotherapy. *Journal of Consulting Psychology*, 1953, 17, 327-335.
- Berg, I. A. & Hunt, W. A. *The perceptual reaction test*. Evanston, Ill.: Authors, 1949.
- Block, J. *The challenge of response sets*. New York: Appleton-Century-Crofts, 1965.
- Cattell, R. B. & Eber, H. W. *Handbook for the sixteen personality factor questionnaire*. (1957 ed.) Champaign, Ill.: IPAT, 1957.
- Couch, A. & Keniston, K. Yeasayers and naysayers: Agreeing response set as a personality variable. *Journal of Abnormal and Social Psychology*, 1960, 60, 151-174.
- Cronbach, L. J. An experimental comparison of the multiple true-false test. *Journal of Educational Psychology*, 1941, 32, 533-543.
- Cronbach, L. J. Studies of acquiescence as a factor in the true-false test. *Journal of Educational Psychology*, 1942, 33, 401-415.
- Cronbach, L. J. Further evidence on response sets and test designs. *Educational and Psychological Measurement*, 1950, 10, 3-31.
- Edwards, A. L. *The social desirability variable in personality assessment*. New York: Dryden, 1957.
- Forehand, G. A. Relationships among response sets and cognitive behaviors. *Educational and Psychological Measurement*, 1962, 22, 287-302.
- Foster, R. J. Acquiescent response set as a measure of acquiescence. *Journal of Abnormal and Social Psychology*, 1961, 60, 155-160.
- Fricke, B. G. Response set as a suppressor variable in the OASIS and MMPI. *Journal of Consulting Psychology*, 1956, 20, 161-169.
- Gardner, R. L., Holzman, P. S., Klein, G. S., Linton, H., & Spence, D. P. Cognitive control: A study of individual consistencies in cognitive behavior. *Psychological Issues* 1, 1959, 1, No. 4.
- Guilford, J. P. *Fundamental statistics in psychology and education*. New York: McGraw-Hill, 1956.
- Harmon, H. H. *Modern factor analysis*. Chicago: Univ. Chicago Press, 1960.
- Hathaway, S. R. & McKinley, J. C. *MMPI manual*. New York: Psychological Corporation, 1951.
- Husek, T. R. Acquiescence as a response set and as personality characteristic. *Educational and Psychological Measurement*, 1961, 21, 295-307.
- Jackson, D. N. & Messick, S. J. A note on ethnocentrism and acquiescent response set. *Journal of Abnormal and Social Psychology*, 1957, 54, 132-134.
- Jackson, D. N. & Messick, S. J. Content and style in personality assessment. *Psychological Bulletin*, 1958, 55, 243-252.
- Jackson, D. N. & Messick, S. J. Response styles on MMPI: Comparison of clinical and normal samples. *NIMH*, 1961, No. 24. (b)
- Lewis, L. H. Acquiescence response set construct or artifact? Doctoral dissertation, University of Nebraska, Ann Arbor, Mich.: University Microfilms, 1967. No. 67-15848.
- McGee, R. K. The relationship between response style and personality variables: I. The measurement of response acquiescence. *Journal*

- of *Abnormal and Social Psychology*, 1962, 64, 229-233. (a)
- McGee, R. K. The relationship between response style and personality variables: II. The prediction of independent conformity behavior. *Journal of Abnormal and Social Psychology*, 1962, 65, 347-351. (b)
- McGee, R. K. Response style as a personality variable: By what criterion? *Psychological Bulletin*, 1962, 59, 284-295. (c)
- Nunnally, J. C. & Husek, T. R. The phony language examination: An approach to the measurement of response bias. *Educational and Psychological Measurement*, 1958, 18, 275-282.
- Rorer, L. G. The great response style myth. *Psychological Bulletin*, 1965, 63, 129-156.
- Schiaie, K. W. A test of behavioral rigidity. *Journal of Abnormal and Social Psychology*, 1955, 51, 604-610.
- Schutz, R. E., & Foster, R. J. A factor analytic study of acquiescent and extreme response sets. *Educational and Psychological Measurement*, 1963, 23, 435-447.
- Shaffer, J. W. A new acquiescence scale for the MMPI. *Journal of Clinical Psychology*, 1963, 19, 412-415.
- Siller, J. & Chipman, A. Response set paralysis: Implications for measurement and control. *American Psychologist*, 1962, 17, 391. (Abstract)
- Thurstone, Thelma G. *Manual for the SRA primary mental abilities*. (3rd ed.) Chicago: Scientific Research Association, 1958.
- Welsh, G. S. Factor dimensions A and R. In G. S. Welsh & W. G. Dahlstrom (Eds.), *Basic readings on the MMPI in psychology and medicine*. Minneapolis: Univer. Minn. Press, 1956.
- Witkin, H. A. Individual differences in ease of perception of embedded figures. *Journal of Personality*, 1950, 19, 1-15.

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Dogmatism, Sex of the Subject, and Cognitive Complexity

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Summary: An attempt was made to assess the relationship of (1) high, medium, and low dogmatism and (2) sex of the S to cognitive complexity. It was found that females were significantly more complex than males and that dogmatism was curvilinearly related to complexity. In addition, sex and dogmatism interacted significantly. The results were interpreted in terms of the functional relevance of cognitive complexity to qualitatively different modes of structuring the stimulus world.

Cognitive complexity has been used by a number of investigators as an independent, explanatory variable accounting for various interpersonal phenomena, such as, the ability to integrate conflicting information (Nidorf and Crockett, 1965), preferential behavior (Nidorf and Crockett, 1964), primacy-recency effects in impression formation (Mayo and Crockett, 1964), and so on. There is no literature however, on cognitive complexity as a dependent variable. It is therefore the purpose of the present study to explore various correlates of cognitive complexity.

Cognitive complexity refers to the number of interpersonal constructs available to a person as he codes his stimulus world (Crockett, 1965). Operationally, the more complex the person, the more constructs available to him. In the context of this definition it is reasonable to assume that the person who is high in cognitive complexity has more thoroughly differentiated his stimulus world (Melzer, Crockett, and Rosencrantz, 1966). What, however, leads one person to such differentiation and not another?

One variable which seems related to stimulus differentiation—and consequent cognitive complexity—is dogmatism. A dogmatic person is one who tends to be leader oriented, inhibited, uncreative, unspontaneous, and anxious; the opposite tends to be true of people low on the dogmatism scale (Zagona and Zurcher, 1964). Stated more generally, a dogmatic person is characterized by "a relatively closed cognitive organization of beliefs and disbeliefs about reality organized around a central set of beliefs about absolute authority which, in turn, provides a framework for patterns of intolerance and qualified tolerance toward others

(Rokeach, 1956, p.3)." From this description of the dogmatic person then, one is led to expect that his closed cognitive system would be negatively correlated with cognitive complexity—the dogmatic would not have the cognitive flexibility to lead him to differentiate the multitudinous aspects of his interpersonal world. Therefore, we would predict that high dogmatism would be associated with low cognitive complexity and low dogmatism with high complexity.

The sex of the S is another variable likely to be associated with cognitive complexity. Nidorf and Crockett (1965) have informally noted that females appear to be more complex than males. This sex-linked hypothesis will be formally tested in the present investigation.

In summary, then, we will attempt to assess the relationship of (1) high and low dogmatism and (2) the sex of the S to cognitive complexity.

Method

Subjects

Forty-two male and 66 female students enrolled in an Introductory Psychology course at San Fernando Valley State College served as Ss for the investigation. These Ss may be considered representative of the College's entire population of freshmen and sophomores because Introductory Psychology is required for the entire student-body.

Both experimental measures were administered during regular class sessions. The dogmatism measure consisted of a 40-item scale developed by Rokeach (1956), consisting of statements such as "The United States and Russia have just about nothing in common," "Most peo-

ple just don't know what is good for them," and so on. In responding to each of the 40 items, the *S* indicated his agreement with them by coding a True or False. The distribution of scores was trichotomized to identify *Ss* as "low," "medium," and "high" in dogmatism.

Cognitive complexity was measured by a modification of the Role Category Questionnaire (Rosencrantz and Crockett, 1965). Rather than describing eight individuals, the *Ss* used in the present study described two people: someone they liked and someone they disliked. The measure of cognitive complexity was the number of different interpersonal constructs used in these two descriptions.¹

Results

The data were analyzed using a 2 by 3 analysis of variance design with cognitive complexity scores as the dependent variable. Thus, in the design, male and female

Ss were classified as either low, medium or high dogmatics. Since there were different numbers of *Ss* in each cell, the groups were equalized by random deletion of *Ss*. In addition, since the between-cell variances proved to be heterogenous, the cognitive complexity scores were transformed by the square root method. The final results of the analysis appear in Table 1. Table 2 contains the mean complexity scores for each experimental group.

From Table 1, it may be seen that female *Ss* were significantly more complex ($\bar{X} = 48.81$) than male *Ss* ($\bar{X} = 43.16$). In addition, the cognitive complexity means of the three dogmatism groups differed significantly (high ($\bar{X} = 47.44$), low ($\bar{X} = 48.17$), medium ($\bar{X} = 44.22$). Both of these findings, however, must be further qualified, because the sex of the *S* interacts significantly with the degree of dogmatism. Thus, from Table 2 it may be seen that cognitive complexity is curvilinearly related to the three dogmatism groups; however, high dogmatic males are more complex than low dogmatic males, whereas, the situation is reversed for females: low dogmatic are more complex than high dogmatic females.

¹ In an unpublished study by Nidorf and Argabrite, the present measure of cognitive complexity correlated .71 with the Eight Role Category Questionnaire.

Table 1

Analysis of Variance of Cognitive Complexity Scores

Source	df	Mean Square	F	p
Between	5	—	—	—
Sex	1	815.1	70.88	<.001
Dogmatism	2	158.9	13.82	<.001
S by D	2	43.2	3.76	<.05
Within	102	11.5	—	—

Table 2

Mean Cognitive Complexity Scores for Each Experimental Group*

	Dogmatism		
	low	medium	high
male	43.14	41.64	44.71
female	51.36	45.86	49.18

* Critical difference = 1.57 ($p < .05$)

Discussion

Theoretically, it may be assumed that interpersonal constructs are cognitive counterparts to cues in the stimulus world; thus, a person with a large number of constructs is able to identify a greater number of characteristics of other people than a person with a low number of constructs (Meltzer, Crockett, and Rosencrantz, 1966). Therefore, the fact that females are more cognitively complex than males would indicate that women are better equipped than men to perceive and code the diversity of their interpersonal environments. This supports the popular notion that females are more sensitive to other people than are males.

The more surprising result of the present study, however, is the way in which dogmatism is related to cognitive complexity. We had expected that high dogmatics—because of the relatively closed nature of their cognitive systems—would neither have nor be likely to develop the cognitive complexity that would characterize the low dogmatic. Instead, we find that the mid-range dogmatics are the least complex. Why, then, should the two extremes in dogmatism be high in cognitive complexity? Perhaps the answer to this question lies in the role and function of cognitive complexity in the behavior of each extreme dogmatic group. On the one hand, a characteristic of highly dogmatic people is their strong need to structure their stimulus worlds (Zagona and Zurcher, 1964). This need is related

to anxiety states: the more structure that the high dogmatic provides, the less his anxiety (Rokeach and Fruchter, 1956). Since it is reasonable to assume that cognitive categories are needed to provide structure, we may hypothesize that the high dogmatic is impelled to differentiate his stimulus environment so that he may structurally code it and, consequently, bind his anxiety. Thus, high cognitive complexity develops in high dogmatics as a function of anxiety states. On the other hand, the open nature of the low dogmatic's high cognitive complexity functions to enhance his being, while the high complexity of the high dogmatic functions as a coping mechanism.

Within the context of the above argument, the sex by dogmatism interaction may be understood by considering an additional fact: namely, that the male's stimulus environment is more stressful than that of the female (McKee and Sheriffs, 1959). Thus, the finding that the *relative* level of cognitive complexity in the high male dogmatic is greater than that of the high female dogmatic is explicable in terms of the greater amount of anxiety attending the male role. In effect, the high male dogmatic is impelled to differentiate his stimulus environment to a *relatively* greater degree than the female who encounters less stress in her environment.

In conclusion, it would seem that the most important suggestion for future research stemming from the above discussion would be as follows: when cognitive

complexity is used as an independent variable in studies involving *S*'s value systems (see, for example, Meltzer, Crockett, and Rosencrantz, 1966), care should be taken to control for the functional relevance of high complexity. High complex *S*s are likely to be both dogmatic and non-dogmatic; thus value judgements made by such a high complexity group may be confounded as a function of the two extremes of dogmatism within the same group.

REFERENCES

- Crockett, W. H. Cognitive complexity and impression formation. In B. A. Maher (Ed.), *Progress in experimental personality research*. Vol. 2. New York: Academic Press, 1965. Pp.47-90
- McKee, J. & Sherriffs, A. Men's and women's beliefs, ideals and self-concepts. *American Journal of Sociology*, 1959, 64, 356-363.
- Mayo, C. W. & Crockett, W. H. Cognitive complexity and primacy-recency effects in impression formation. *Journal of Abnormal and Social Psychology*, 1964, 68, 335-338.
- Meltzer, B., Crockett, W. H., & Rosencrantz, P. Cognitive complexity, value congruity, and the integration of potentially incompatible information in impressions of others. *Journal of Personality & Social Psychology*, 1966, 4, 338-343.
- Nidorf, L. & Crockett, W. H. Some factors affecting the amount of information sought about others. *Journal of Abnormal & Social Psychology*, 1964, 69, 98-101.
- Nidorf, L. & Crockett, W. H. Cognitive complexity and the integration of conflicting information in written impressions. *Journal of Social Psychology*, 1965, 66, 165-169.
- Rokeach, M. Political and religious dogmatism: An alternative to the authoritarian personality. *Psychological Monographs*, 1956, 70, No. 18.
- Rokeach, M. & Fruchter, B. A factional study of dogmatism and related concepts. *Journal of Abnormal and Social Psychology*, 1956, 53, 356-360.
- Rosencrantz, P. & Crockett, W. H. Some factors influencing the assimilation of disparate information in impression formation. *Journal of Personality and Social Psychology*, 1965, 2, 397-402.
- Zagona, S. & Zurcher, L. Participation, interaction and role behavior in groups selected from extremes of the open-closed cognitive continuum. *Journal of Social Psychology*, 1964, 58, 255-264.

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Book Reviews

Raph, Jane Beasley, Goldberg, Miriam L., and Parson, Harry. *Bright Underachievers*. New York: Teacher College Press, 1966, 289 pp., \$6.75.

This is a well written report of what must have been a disappointing experience. Several efforts were made to improve the grades of selected underachievers through special classes with highly motivated teachers. Essentially no long-range changes were obtained. Part of the problem seems to have been due to the fact that in two experiments it was not possible to keep the same teacher, part was due to the fact that the intervention came too late to affect the well established poor study habits and lack of aspiration of the underachievers.

The studies were carried out by the Talented Youth Project of the Horace Mann-Lincoln Institute of Teachers College, Columbia University. Two studies were done in a school in Evanston, Illinois, and three in a school in the Bronx, New York.

In Evanston two types of descriptive data were obtained: a) interviews of students, school records and ratings by teachers ("the interview study") and b) two questionnaires of student attitudes toward self and school ("the attitude study"). In the interview or pilot study 24 students with IQs above 120 but low grades (the underachievers) and 13 students with IQs below 116 but with high grades (the overachievers) were compared. Few clear differences were found. Fathers of H students more often had managerial or professional jobs than fathers of U students, so that perhaps H students had higher occupational aspirations. Findings and hunches from this study helped in planning the later studies. In the attitude study 5 groups were compared on estimates of own ability and attitudes towards school and study: 50 underachievers (U), 50 overachievers (O) and 50 high achievers (H) as well as 50 lower ability students (L) and a random sample (R) of 50 students.

Although the order of the 5 mean ability estimates was as expected there were no large differences. Few school attitude items discriminated well, but low achievers viewed the school less favorably. In general, students appraised themselves more in terms of achievement than in terms of measured IQ.

In the Bronx three experiments were performed after 26 underachievers were interviewed in depth. They tended to view studiousness and good grades as conflicting with social activities and popularity. In reality the

high achievers were more active socially and have more hobbies and extracurricular involvement.

For the first experiment 70 underachievers were identified. Half of them were placed in one home room where they were also taught social studies in the following hour by an enthusiastic and warm teacher. The remaining controls (C) were distributed over a number of home rooms and subject matter classes. A group of high achievers of the same IQ range provided another comparison (H). At the end of the first semester the specially treated students (S) had formed many friendships among themselves but they had poorer grades for most subject matters than both control groups. At the end of the second semester the grades for the S group were higher than for the C group but not significantly so. This improvement was lost again in the next year, perhaps because another teacher was assigned for the special class.

In the second experiment half of 62 underachievers in mathematics were placed in a special geometry class where understanding was emphasized, while the remainder was not. After one semester there were no differences in grades although the special group performed better on a published geometry test. For the second semester another teacher was assigned and whatever gains had been made were lost.

In the third study two groups, A and B, of underachievers were assigned to two special teachers for a guidance and study hour, another group of underachievers was designated for control (C) and a high achieving group H was selected. The two special teachers differed markedly: one was dedicated and well liked by the students, the other was inconsistent in his behavior and disliked by some students. After one year there were no differences in grades between groups A, B and C but all had lower grades than group H. The same was still true after two and after three years.

Although in the last experiment the quality of the teacher seemed to make no difference they were expected to provide guidance and help in studying and did not teach one subject matter class. In the first two experiments the role of the special teacher may well have been as crucial as the authors imply but it is also possible that the occasional short term gains were due to a Hawthorne effect. The finding that some control students showed marked improvements demonstrates the need for such controls in any future evaluation of special teaching for underachievers. The general conclusion of the authors is that the tenth grade is

too late to change the work habits and attitudes of most underachievers.

A valuable addition to this monograph is a 68 page review of the literature on underachievers.

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Allison, Joel, Blatt, Sidney J., & Zimet, Carl N., *The Interpretation of Psychological Tests*. New York: Harper & Row, 1968. 342 pp., \$8.75.

How do you feel about test interpretations derived from psychoanalytic ego psychology? The answer to this question may determine how much you like this book, since it places its interpretive eggs in the psychoanalytic ego psychology basket. This is really not unusual, since psychodiagnostic interpretations often stem from ego psychology.

The authors have covered three important tests: the Wechsler Adult Intelligence Scale, the Thematic Apperception Test, and the Rorschach test. In addition to the introductory chapter and one chapter apiece on the above-mentioned tests, three interesting chapters are devoted to the testing, re-testing, and follow-up on a patient. Since the patient was a young female who possessed both intelligence and sexual conflicts, among other problems, the testing is quite interesting and the selection of this patient for a case study involving the tests and their interpretation contributes substantially to the value of this volume. Many readers may feel that figure drawings and their interpretation should have been included, since they are frequently a standard part of the clinical battery.

The WAIS is approached as both a diagnostic instrument and a measure of intellectual functioning. By diagnosis, we refer to understanding the person, his current status and underlying dynamics, not to the placing of a psychiatric diagnosis upon him. Use of the WAIS for diagnostic purposes was spelled out by Rapaport, Gill, and Schafer (1945), and the present authors draw heavily upon this source. Using the Rapaport et al. formulations is both a strength and weakness. Strength occurs because Rapaport et al. made important contributions to psychodiagnostic testing by their analysis of diagnostic implications of I.Q. tests. The weakness is that the reader already acquainted with the Rapaport et al. volume may find a high level of redundancy present when he reads the current chapter on the WAIS.

The chapter on the TAT is consistent with the overall high quality of the authors' interpretations. They believe it is erroneous to assume that the interpersonal scenes described by the subject indicate his actual relationships. The scenes described by the subject may indicate relationships he wishes for, fears, or is otherwise

concerned about. In addition to using a rather sophisticated approach to diagnostic interpretation, the authors present the reader with indicators of various pathological states. For example, schizophrenic thinking in the TAT is said to be indicated by such things as: disorganization of the structure of the story, perceptual misrecognition and peculiar verbalizations, lack of cohesive theme, and other aspects of the subject's functioning which Allison et al. consider suggestive of thought disorder.

The longest chapter is the one on the Rorschach, which covers 126 pages. This length probably reflects the high status, among projective test users, accorded the Rorschach. Their patient, Mrs. T., was given the Rorschach on different occasions, with notably different results. Such a finding suggests that the Rorschach has, among its many psychometric weaknesses, a low level of reliability. However, the authors pretty much rationalize this away (pp. 202-203) by talking about the questions of consistency of personality over time, and related issues. While they may be correct, it seems just as reasonable to conclude that we have indicated here a real weakness of the Rorschach. The evidence does not seem overwhelming on either side of the issue, so perhaps what occurs is that one interprets in terms of his bias. The psychometrician thinks the Rorschach is weak, while the everyday user thinks that people simply change. It is possible that both psychometrician and everyday user are correct, and that the Rorschach reflects both change in the person and poor measurement reliability.

Diagnosticians sometimes overemphasize the psychopathology of their subjects, and Allison et al. feel this is exactly what Rapaport et al. did. The present authors state that one must consider also the subject's creative responses as well as his pathological ones. This is an important consideration since regression in the service of the ego may represent creativity, yet be interpreted as pathology by the naive test interpreter. Another fallacy sometimes committed by test interpreters, and again opposed to creative thinking, is to assume that the subject should respond like the common man in the culture. Phrased in this fashion, almost all test interpreters would deny that they commit this fallacy, though in fact many seem to do so. Another way of putting this is to say that the tester is overly conventional, and "penalizes" his patient's non-conventionality. On page 238 the authors state that Mrs. T's embarrassment and discomfort with a sexual response she gives to card VI of the Rorschach is "... more appropriate than was her ease and openness earlier." Ease, openness, or lack of anxiety when mentioning sex is not necessarily indicative of pathology, and may be more desirable than inhibition or "appropriateness."

There is one more weakness in this otherwise commendable book. The authors avoid discussing research findings for the most part. This is not unusual, since practicing clinicians often are divorced from research, just as researchers are often divorced from the world of

patients and hospitals. However, this avoidance of research limits the volume in that important points are not considered. What about the order effects in the Rorschach (Eisenman, Bernard, & Hannon, 1966), and order effects and card pull in all tests (Murstein, 1965)? What about the different levels of a patient's response (Eisenman, 1968)? Although these issues are not necessarily totally avoided, they are just about missed, especially as regards the bearing of research studies on these questions. Ironically, the authors do occasionally discuss their own research, and this adds to the value of their book. But, by and large, they avoid research and present a strictly clinical approach.

Despite some of the weaknesses detailed above, this is a book of high quality which should aid the reader in his interpretation of psychological tests. As a supplementary text in projective techniques courses, the Allison et al. volume would help students to appreciate how the skilled clinician derives interpretations from patients' responses.

REFERENCES

- Eisenman, R. The patient who fears success. *Psychology*, 1968, 5, in press.
- Eisenman, R., Bernard, J. L., & Hannon, J. E. Benevolence, potency, and God: A Semantic Differential Study of the Rorschach. *Perceptual and Motor Skills*, 1966, 22, 75-78.
- Murstein, B. I. (Ed.). *Handbook of projective techniques*. New York: Basic Books, 1965.
- Rapaport, D., Gill, M., & Schafer, R. *Diagnostic psychological testing*. Chicago: Year Book Medical Publisher, 1945.

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P. A. NEWS & NOTES

This is the third issue of the Journal since P. A. NEWS & NOTES first appeared. The replies, inquiries, and requests received have confirmed the need for such an information exchange. However, the PA material received to be shared with others has been very limited. This must be a result of busy schedules rather than absence of interesting and stimulating work with PA techniques—at least let's hope so, otherwise we're in sad shape. Please take a minute and jot down any information you may have concerning bibliographies, normative data, unusual test protocols, new tests, research you

are doing, etc., and send it along to me as soon as possible.

For many years Earl Taulbee has been compiling an annotated, indexed, and comprehensive MMPI bibliography and with the recent help of David E. Stenmark and H. Wilkes Wright, the list is beginning to take on a comprehensive look. At present, over 2500 references have been collected, including approximately 1650 journal references, 200 foreign references, 300 doctoral dissertations, 100 masters theses and unpublished studies, and 35 book reviews, test reviews, etc. Earl is particularly interested in receiving very brief abstracts of any masters theses or unpublished studies you may have to pass along. These seldom appear in the literature.

So—again, please get your P. A. NEWS & NOTES to me.

E. S. Taulbee

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Announcements

PROGRAM-1969 ANNUAL MEETING

Our program chairman for the 1969 Annual Meeting, Dr. Louise B. Ames, is currently developing symposia in the area of projective techniques and personality assessment to be presented for co-sponsorship with various Divisions of APA. If any readers of this Journal are collecting symposia that fall into this area that could be co-sponsored by the Society for Projective Techniques and Personality Assessment, Inc., and the appropriate APA Division, Dr. Ames would appreciate being informed so that we can make them a part of our program. Address all communications to:

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**Board Meeting Minutes
Society For Projective Techniques
& Personality Assessment, Inc.**

The fall Board Meeting of the Society for Projective Techniques and Personality Assessment was held Thursday evening, August 29th, at the St. Francis Hotel in San Francisco. Members present were Barry Molish (President), Kenneth Little, Martin Mayman, Walter Klopfer, Norman Farberow, Mary Haworth, Marilyn Weir and Joan Quinn.

The usual committee reports were read and accepted. The Editorial Committee reported 82 manuscripts received in the last six months, of which 22 have been published or are in press, 25 are being reviewed and 35 have been rejected. The editor announced he would welcome more articles of reviews of research, surveys, case studies and theoretical papers. According to the Membership Committee report, 25 applications have been received since March. The recommendations were: 15 for membership, 5 for associate status and 1 as affiliate. Three members were elected to Fellow status: George Cerbus, Edwin Megargee and Michael Merbaum. Ken Little, representing the Program Committee, announced that five symposia had been arranged for co-sponsorship with various divisions at the APA meetings on the succeeding days.

Earl Taulbee has completed a Manual of Administrative Procedures which outlines the duties of each office and standing committee. This will soon be distributed.

The Society is continuing to be represented in the Inter-Association Council for Test Reviewing. Walter Klopfer attends their meetings for the Journal and Martin Mayman was elected to represent the Society for a three-year term.

Walter Klopfer gave a brief report on the recent International Congress of Rorschach and Other Projective Techniques which was held in London in August.

The general meeting of the Society was held Friday, August 30th, in the Fairmont

Hotel, San Francisco. Henry Murray, the recipient of last year's Great Man Award, gave a paper entitled, "Sundry Thoughts about Varieties of Imagination". Following his presentation, Barry Molish gave his Presidential address, "The Quest for Charisma".

The annual business meeting followed. The nominating committee announced the election of the following officers:

President-Elect,
Louise Bates Ames
Eastern Representative,
Robert A. Harris
Secretary,
Gordon Filmer-Bennett
Executive Editor,
Walter Klopfer
Editor,
Bruno Klopfer

It was announced that Robert Holt has been selected for the Great Man Award, and that he will be asked to present a paper at the next annual meeting.

After various committee reports, the meeting was turned over to the new President, Kenneth Little, who called for a motion for adjournment.

Respectfully submitted,

Mary R. Haworth, Secretary

**1st LATIN-AMERICAN
RORSCHACH CONGRESS**

The first Latin-American Rorschach Congress will be held in Buenos Aires from April 8th to 11th, 1969, immediately after the Montevideo meeting. The topic is "Shading Effects in Rorschach Responses". Please send written contributions to:

Prof. Irene Orlando, President
Sociedad Argentina

De Psicodiagnostico De Rorschach
Oro 3016 - 40C
Buenos Aires

NOTICE

American Diversified Research Corporation is preparing a primer on the utilization of Operations Research/Management Sciences techniques in administration of mental health programs for the National Institute of Mental Health, U. S. Department of Health, Education, and Welfare.

This primer will be distributed to mental health program planners, administrators and others.

We are requesting your assistance in identifying applications of Operations Re-

search/Management Science techniques in program evaluation, resource allocation, organization effectiveness screening or diagnostic decision-making, manpower utilization, etc. We will appreciate your bringing such applications that are known to you to our attention.

Please identify name and address of mental health program or institution and send to William Karp, President, American Diversified Research Corporation, 900 North Michigan Avenue, Chicago, Illinois 60611.

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